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ABSTRACT

This series of 30 one- to two-page abstracts covering 1992 highlights a variety of innovative approaches to teaching and learning in the community college. Topics covered in the abstracts include: (1) faculty recognition and orientation; (2) the Amado M. Pena, Jr., Scholarship Program; (3) innovative teaching techniques, with individual abstracts focusing on instruction in English, mathematics, economics, nursing, computer education, and science; (4) study and test preparation tips for students; (5) alternative evaluation methods; (6) an international visitor program; (7) cultural diversity and multicultural education; (8) the National Institute for Staff and Organizational Development conference results; (9) the role of writing in different disciplines; (10) building student self-esteem in the classroom; (11) the role of student as teacher; (12) the "Course Selection System"; (13) instructor and student goals; (14) poetry writing in English classes; (15) using newspapers in the classroom; (16) measuring student and institutional effectiveness; (17) law enforcement and security simulations; (18) student retention; (19) teacher student relationships; (20) political correctness in science instruction; (21) desk top publishing in education; (22) student problem solving; (23) student psychology; (24) nontraditional literature instruction; (25) implementation of a handicapped awareness day; (26) student test anxiety; and (27) creative writing in programs for older adults. (MAB)

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Suanne D. Roueche
Editor

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Quality Teamwork: New Faculty Orientation

Last year Elizabethtown Community College experienced the largest influx of new instructors in its history; 20 percent of the full-time faculty for fall 1990 were new employees. A quality circle, created by the academic dean, centered on the problem of how to effectively orient and assimilate the large group of incoming new faculty.

After two hours, the group of busy bees, buzzing about how to orient new faculty, had collectively gathered enough nectar to make a good pot of honey. The quality circle "buzz groups" followed a six-step problem-solving process modeled on methods used by Japanese workforce teams to continually improve quality manufacturing processes:

1. Identify the problem.
2. Brainstorm solutions.
3. Analyze solutions.
4. Choose solutions by consensus.
5. Make a plan and implement.
6. Check back to assess solutions.

Because the focus was on implementing changes, whining and finger-pointing were replaced by constructive generation of creative ideas accepted through consensus of the whole group.

Plans were made for a collaborative orientation program, and individuals generously volunteered to work on specific parts of the agenda. It was fascinating to observe how much cooperation emerged from a process that empowered a group of individuals to function as a team. Members of the quality circle felt they owned the problem, as well as their proposed solutions, so that nothing was referred to another committee or department.

Much of the scheduling and coordinating of activities for the expanded orientation was completed by a faculty member who was being replaced (leaving the college because of her husband's military transfer), but who felt so strongly about making a contribution that she continued to work on the project even after her contract with the college had ended. Many other faculty and staff members donated large amounts of time and energy to the project, all of this activity falling outside any officially assigned college duties.

* * *

The result of this quality circle teamwork was a comprehensive orientation program presented for new faculty during the first two weeks in August and just prior to the start of fall classes. Teamwork was stressed in the delivery as well as in the planning of the program. Orientation "buddies" acted as initial guides for each new faculty member; to better mesh personalities and interests, first-year mentors would be chosen later. The first orientation day provided time in the morning for new faculty to get keys, move into their offices, and meet their hallmates. In the afternoon, the college president and academic dean welcomed the new faculty; then individuals escorted small groups of them around campus, showing them the ropes, and introducing them to others at the college.

For the remainder of the first week and much of the second, new faculty attended seminar-style classes with topics presented by faculty members, counselors, librarians, division chairs, deans, support staff, and coordinators. Class sessions ranged from pragmatic instructions on filling out college forms to loftier discussions of teaching philosophies and testing pedagogies. New faculty were given opportunities to learn and ask questions about college mission and goals, service area characteristics, college credit and noncredit programs, typical student profiles, classroom policies and procedures, faculty rights and responsibilities, academic rights of students, syllabus and test construction, textbook selection, campus teaching/learning resources, counseling services, faculty evaluation methods, employee benefits, etc. Participants soon coined their own name for the training program: "ECC 101."

A number of social activities and icebreakers were included to help new faculty feel part of the college community. A "syllabi and salads" welcoming potluck luncheon gave all college employees a chance to meet and entertain the new instructors. A trivia scavenger hunt—similar to the one at San Diego City College as described in *Innovation Abstracts* (Volume XII, Number 17)—prompted new faculty to meet and discover hobbies and special interests of their colleagues. Example: What faculty member in the business management division collects baseball cards?

The high point of these social activities was a daylong tour of five counties in the college's service area. We borrowed a city school bus and driver, packed box lunches for a picnic at a local historic site, visited off-campus sites, traveled 200 miles of back country roads, and listened to a wealth of local anecdotes and tales colorfully narrated by our enthusiastic

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tour guide—a faculty member and lifetime resident of the region. The tour oriented new faculty to the geographical service area, while the long bus ride provided them an extended period of time to talk and get to know one another.

By the middle of the second week, new faculty began attending other college and divisional meetings. Two faculty members, who were new the previous year, hosted a special no-administrators-present session for new faculty called "All the Things You Still Want to Know But Are Afraid to Ask." They addressed such areas as unwritten rules, hidden pitfalls, campus customs, strategies for overcoming obstacles, and other aspects of the campus culture that some individuals might not feel comfortable discussing candidly.

The last two days of the second week involved an overnight stay at a conference center in Lexington, Kentucky. There the 12 new ECC faculty joined 150 other new Kentucky community college employees and participated in the system-wide orientation to the University of Kentucky Community College System. Here they met the university president and community college chancellor, learned about system policies and procedures, attended sessions on various topics, and interacted with colleagues in their disciplines from other colleges.

On a follow-up assessment instrument, new faculty gave high evaluations to various components of the orientation program; their overall ratings were 62% excellent, 38% good, and 0% average, below average, or poor. They offered suggestions for improving the sessions (to be used by the team that plans next year's orientation program). The "buzz groups" have been so successful in implementing changes on our campus that we plan to drop a number of traditional standing committees and replace them with ad hoc quality circle teams created and empowered to solve specific problems.

R. Darby Williams, *Dean of Academic Affairs*

For further information, contact the author at Elizabethtown Community College, 600 College Street Road, Elizabethtown, KY 42701.

Celebrate Excellence: Recognition of Faculty and Staff Accomplishments

The Governor of Colorado proclaimed last February to be Community College Awareness Month, and the Community College of Aurora designed an "Excellence Week" to acknowledge and honor the many accomplishments of its faculty and staff. The week began with an *Employee Excellence Recognition* reception. Specially cast medallions were awarded to all previous and current Classified Employees of the Year and Faculty of the Year recipients, and each recipient was asked to wear the medallion for the entire week. We hoped that students, faculty, and staff would ask the recipients about their accomplishments.

The *Phi Theta Kappa Recognition* was held mid-week. The plaque commemorating the initiation of the local charter (established within the last year) and the plaques with signatures of the charter members were displayed.

The *Faculty/Program Recognition* was the finale. Classified Employees and Faculty of the Year were recognized once again; and the Outstanding Service Award, program awards, and divisional awards were presented. The highlight of the evening was faculty and staff sharing memories of people and experiences related to the college's history.

To sustain the week's momentum, a college bulletin board—designated the "Excellence Board"—was a visual display of the high caliber of commitment and excellence of the faculty and staff. All were encouraged to post their accomplishments. Many had published books and articles, had received special honors in connection with volunteer programs, and had been guest speakers at local and national conferences.

The response to the Excellence Week and Excellence Board was overwhelming, and the Excellence Board remains a permanent part of CCA's fixtures. Students, staff, and faculty still post accomplishments and stop to check the board for the most recent additions.

Ileta Smith, *Excellence Week Coordinator & Academic Counselor*

For further information, contact the author at Community College of Aurora, 791 Chambers Road, Aurora, CO 80011.

Suanne D. Roueche, Editor
January 24, 1992, Vol. XIV, No. 1

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The Amado M. Peña, Jr., Scholarship Program

Everyone has heard that "life imitates art," and art has been used to bring life to one institution's financial aid program. Noted Southwest artist Amado M. Peña, Jr., grew up in humble surroundings in the Texas border town of Laredo. At the completion of his formal education, he moved his dreams of being a wage-earning artist 250 miles north to Austin, the capital of Texas. His earliest work was peddled on street corners across from The University of Texas for the meager sum of 50 cents. Today, some of these early works sell for thousands of dollars. His career has led him and his work to many of the world's finest art galleries, and in many circles his name is synonymous with the artistic style of the Southwest. He has, in a word, "made it." Fortunately for a new generation of young Hispanics, he has never forgotten where he has been or what his responsibilities are to others.

In 1989, he agreed to establish the Amado M. Peña, Jr., endowed scholarship program for Hispanic students at Austin Community College. Not only did he establish the program, but he has worked tirelessly to ensure its long-term success.

For the program's first fund-raising effort, an original work by Peña was reproduced in poster form, in a limited edition. The posters sold for $50 each, and the total sales (more than $60,000) went directly to the program endowment. About the piece, *Los Cuentos*, Peña wrote:

> *I was a teacher in Austin for 16 years, and I have seen educational opportunities transform many lives. As a matter of fact, the artwork I have produced to establish the scholarship fund is about the storyteller, or teacher, who encourages us to be more than we thought we could be. My special teacher was my grandmother. This portrait is dedicated to her and to all teachers.*

When the *Los Cuentos* original was sold, Peña donated 10% of its price to the scholarship fund. From the first year's effort, eight scholarships were awarded.

In 1990, Amado Peña offered another original work. The even more limited edition was of a signed and numbered serigraph, *Dos Mujeres*. Sales revenues reached $15,000.

Then in the summer of 1991, Peña arranged for an art auction to further benefit the fund. He approached other Southwest masters, asked them to donate original works for auction, and donated works from his own personal collection as well. Actor Lou Diamond Phillips (*La Bamba, Stand and Deliver*, and *Young Guns I* and *II*) responded to a call from his friend Peña and flew from California to serve as celebrity auctioneer. This event raised an additional $27,000 for the scholarship program.

Peña has twice served the college as an artist-in-residence, on each occasion spending two full days teaching a wide range of art topics to aspiring artists; he would not accept an honorarium.

* * *

No individual can better describe the need for help in financing an education than the person who must seek it. In awarding the Peña scholarship, ACC asks students to describe in writing their need for financial support and their aspirations. Two such responses are offered here.

> *I am originally from Lampasas, Nuevo Leon, Mexico. I would like a better education than my parents had. My father graduated from sixth grade. My mother went only to second. Since my father's death three years ago, we have lived only on social security. I am hoping to get this scholarship so that my dreams for a good education can come true.*
>
> *'Growing up on the rough side of town' I had the opportunity to experience the pain and struggles of the poor. I feel that poverty in minorities is itself one aspect of society that desperately needs attention. Hopefully, my completed studies will open the doors for me to help the kinds of people I grew up knowing.*

Amado Peña's roots in the Rio Grande Valley have given him an uncommon understanding of the problems of the socioeconomically disadvantaged; his earliest experiences have never been forgotten. The students whose comments are featured here are real people, dependent on others who have been successful and who can now offer a helping hand. Amado Peña understands and embraces this critical need.

❦❦❦❦

On each of our campuses and in each of our communities, there may be individuals who would choose to help remove the burden of long-term debt from the shoulders of those already sufficiently burdened as they pursue the dream of a higher education. Austin Community College is fortunate to have been the "right place at the right time," becoming one beneficiary of Amado Peña, Jr.'s commitment to giving something back to his community and to enriching the lives of students in a tangible and critical way.

Fifteen students now receive Peña scholarships. His original commitment to the program is stronger today than ever, and new fund-raising initiatives are in the planning stages.

Dan Angel, *President*
Mike DeVault, *Executive Assistant to the President*

For further information, contact the authors at Austin Community College, P.O. Box 140526, Austin, TX 78714.

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Games Nurses Play

Creative teaching techniques involve the use of many learning principles, and they promote the development of critical thinking skills. Techniques such as "gaming" involve the active participation of the student and generate a new enthusiasm for learning.

At Monroe Community College, nursing students are required to take comprehensive final examinations. Instructors have adapted the popular board game "Trivial Pursuit"™ (Selchow and Righter Co., Bay Shore, NY) to help students prepare for the exams. The normal game subjects have been replaced with six nursing-related categories: (M) medications; (N) numbers; (DT) definitions/terminology; (P) procedures; (NP) nursing process; and (D) documentation.

Playing the game is easy and fun. Students may play as individuals or in opposing groups. With some exceptions, the rules of the game are basically the same as those outlined in the "Trivial Pursuit"™ instruction booklet. To move the game along quickly, instructors allow students to win a "pie wedge" *anytime* the player or team answers a category's question correctly; normally, a player or team can only win a pie wedge when they have landed on a hub, or "headquarters" square, and have answered correctly.

The game presents students with nursing-related questions that must be answered correctly. A correct answer wins the corresponding category's pie wedge. Each player or team is given 60 seconds to answer a question. If a player or team correctly answers the question, they win the category's pie wedge and can continue playing. If they answer incorrectly, the other player or team takes their turn and attempts to answer a question. Once the player or team has won a pie wedge, they do not have to answer any more questions in that category.

The game proceeds with students collecting pie wedges from all six categories. In order to win, the player or team must land in the middle of the board, where they answer an additional question chosen by the opposing player or team.

This gaming technique has been enthusiastically accepted by students, and they play it several times before the final comprehensive examination. The technique has been identified as one major reason for the students' exceptional performance (95 percent pass) on the National Council Licensure Examination.

Pamela Korte, *Instructor, Nursing*

For further information, contact the author at Monroe Community College, P.O. Box 9720, Rochester, NY 14623.

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Using Dialogues as Writing Assignments

Setting:
First Class cabin, TWA,
heading for Saudi Arabia

Characters:
Machiavelli, *an Italian "advisor"*
Lao-Tzu, *a Chinese diplomat*

Machiavelli: I feel we can end the conflict in a sudden, massive, and decisive action.

Lao-Tzu: Oh, hot-headed one! Your ideas are too aggressive. I say to you, take no action. One fire never put out another. Fires are extinguished with water, water seeking quietly its own passive level.

Machiavelli: This is not a time for wasteful words but for action! If we do not act now we will become trapped like a piece of rice between two chopsticks!

This excerpt from an imaginary conversation came from two Freshman Composition students* who collaborated on the following assignment: Write a dialogue which reveals the similarities and/or differences between the political viewpoints of Machiavelli and Lao-Tzu. Using the dialogue as their mode of expression, the students met and, in fact, went quite beyond the objectives of "regular essay" assignments. I have found comparably impressive results in most cases when students use a dialogue form for their writing assignment.

Objectives

Dialogues as writing assignments require students

- to recast main ideas of an assigned reading into their own imaginative words (different from a mere paraphrase or a summary, but effectively accomplishing the objectives of both);
- to anticipate and deal with a point of view different from their own; and
- to resolve or at least synthesize ideas from various viewpoints into a conclusive whole.

In composition classes, the dialogue is not meant to replace essay forms, but it may provide a supplement to or a break from those other forms. Furthermore, as discussed below in more detail, it may serve as a means of brainstorming material to generate ideas for other essays. Imagine, too, how lively class discussion becomes when material from a reading or a lecture is "acted out" in dialogue form. In classes other than composition, the dialogue is extremely useful as a writing assignment since it requires little more than a few "characters" from the discipline and a specific topic to keep the writing focused. It does not require elaborate settings or stage directions, though some students like to add such. Its length varies, and its evaluation is easy: students cannot "bluff" an understanding of material they need to render into dialogue.

Ultimately, the dialogue asks students to understand ideas central to a discipline and then to express those ideas through the filter of their imaginations. Imagination is a key word here, for imagination changes the expression from forcing ideas down on paper to giving voice to those ideas. I must emphasize here how lively the students, their "characters," their ideas, and their expressions become when presented through dialogue. Indeed, Machiavelli's well-aimed simile of a warning to Lao-Tzu not to get caught "like a piece of rice between two chopsticks" speaks for itself.

Applications

The practical applications of using dialogues as writing assignments are numerous in any discipline. I have used dialogues in English and philosophy courses with tremendous success in getting the students to understand key concepts. In fact, in composition the dialogue is particularly useful as an initial "brainstorming" activity to generate ideas from students as they approach a series of difficult readings; a similar approach is used by "creative" writers all the time—"what would happen if?" By brainstorming via dialogue, students must eventually find and understand the main ideas of the reading, then process those ideas through their own viewpoints into debatable form. Moreover, they must deal with the opposition, with the counter point of view, in an engaging

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*Credit to Students: Lonnie Werth and Stacy Webb

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and imaginative way. Since many times the students will team up on a dialogue, they also benefit from collaborative learning while they sharpen their critical thinking and writing skills.

Examples

A few examples from various classes may illustrate the widespread applicability of using dialogues as writing assignments.

In a literature class we took several characters from several short stories and assigned a thematic topic. Imagine what dialogues we got from an imaginary roundtable discussion with:

La Folle (Kate Chopin's *Beyond the Bayou*)
Rainsford (Richard Connell's *Most Dangerous Game*)
Francis Weed (John Cheever's *Country Husband*)
Francis Macomber (Ernest Hemingway's *Short Happy Life of Francis Macomber*)
Fortunato (E. A. Poe's *Cask of Amontillado*) on the topic of fear!

One student decided to have Mrs. Macomber and Mrs. Weed come to blows over how to deal with their husbands!

For some classes (history, math, physical or biological sciences, and perhaps some social sciences), students might research major figures in the discipline and then develop dialogues around specific topics. For example: an American history class might find Thoreau and King in a debate on civil disobedience, or Lee and Grant discussing honor.

American history: Thoreau and King in a debate on civil disobedience; Lee and Grant on honor
Physics: Newton and Einstein on God
Psychology: James and Skinner on free will
Economics: Marx and Galbraith on poverty
Geometry: Euclid and Gauss on whether "parallel" lines can meet

The dialogue, then, accomplishes many of the objectives of good writing assignments while at the same time it provides students in any discipline with a new approach to understanding and writing about main ideas. Clearly, the possibilities in any class are limited only by imagination. And as to who won the debate—Machiavelli or Lao-Tzu—Machiavelli pressed for an arm wrestling match while Lao-Tzu requested a less physical mode of deciding which path to follow. The students resolved the impasse with an in-flight (and ongoing) match of Chinese Checkers. After all, what else could symbolize the slow and deliberate crossover moves of diplomacy?

William Horrell, *Instructor, English/Philosophy*

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Using Mathematical Essays

This semester I "inherited" a (freshman) Calculus class that is small in number (10) but huge in talent. Recognizing such potential, I demanded that students display their problem-solving mathematics abilities beyond mere computations. One of the most fruitful assignments was the result of a test question: Write an essay to compare and contrast techniques of integration. I have chosen short excerpts from their essays. I would not be surprised if you read more of their work in future years. Enjoy!

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It is the plight of every Calculus student to discover, mainly through trial and error, the basic categories of integration common to all types of problems. By doing this, the student has a general form in mind, and by performing any number of legal substitutions or changes, can then reduce the original problem to a known form that he can solve. The two categories of integration, in my opinion, are the power rule and definition. All other strategies are merely methods to change the form of a problem to coincide with the power rule or definition categories. For example, problem 2 on this test is really the power rule in disguise. Trigonometric and u-substitutions are means of changing the problem into that form.

eg. $\int \sin^6 x^3 \cos x \, dx$
$= \int \sin^6 x(1 - \sin^2 x) \cos x \, dx$ trig sub
$= \int \sin^6 x \cos x \, dx - \int \sin^8 x \cos x \, dx$
$= \int u^6 \, du - \int u^8 \, du$ u-sub

POWER RULE

Problem 3, in the same way, is an example of definition and trig is a way of proving it.

eg. $\int \frac{dx}{x^2\sqrt{9 - x^2}}$ $1/9 \int CSC^2 \varnothing \, d\varnothing$

with $\varnothing = 3 \sin x$ as substitution.

Other methods of reducing a problem include completing the square, parts, partial fractions, and others that I have not learned. By utilizing one method or a combination of methods, every problem can be reduced to either power rule or definition.

—J. Clark

When evaluating integrals one should think of finding area. Integration is very helpful when finding the area under any given line, and formulas were generated to help us derive these answers. —E. Paynton

One should always keep in mind to simplify the problem at all times. Keep it simple. These (above) are the steps I use to break down an integration problem and solve it. Once the correct and easiest method of integration is found, the problem is half-solved.

—L. Anderson

For the most part we use our powerful tool of u-substitution to get the functions into correct forms.

—B. Miller

Knowing what the integral is, how to use u-substitution, and the power rule will help us through all integration.... Although there are many types of integration which have some obvious differences, they all have some fundamental similarities. All forms attempt to reach the same goal, make use of manipulation, and take careful work. If you choose the 'wrong' form it could take hours and get ugly.

—G. Abele

A majority of the integrals, in one way or another, use the power rule. This is the first form learned and usually easiest to solve. Most problems require a u-substitution to achieve this.... With simple u-substitutions, most problems can be simplified into forms to which tables and definitions will give an answer.

—M. Comeaux

Before chapter 9, integration was fairly straightforward.... Now some are even complex enough to the point where they must be looked up in a book.

—A. Teixiera

Finally, if you cannot integrate by any method that was just discussed, we could approximate with left-handed end-point approximation, right-handed end-point approximation, trapezoidal approximation, or Simpson's rule. —J. Tarango

Numerical integration is very time-consuming, but quite simpler than other ways. All it requires is algebra. —L. Dongallo

In the beginning there was pre-chapter 9 integrals. You know, those 'simple' integrals that you can 'whip-out' with 'no problem'.... But then came the dreaded chapter 9 integrals and new techniques of integration. Let's recall the simple integral $\int e^x\,dx = e^x + c$. By simply placing an x in front of the e^x, you get a whole new problem. Now in comes one of our many heroes, integration by parts. Let's observe the battle:

"Evil Integral"	"Hero"
$\int xe^x\,dx$	$\int u\,dv = uv - \int v\,du$

Let $u = x \quad dv = e^x\,dx$

$$du = dx \qquad v = e^x$$

$$\begin{aligned}\int xe^x\,dx &= \int u\,dv \\ &= uv - \int v\,du \\ &= xe^x - \int e^x\,dx \\ &= xe^x - e^x + c\end{aligned}$$

The battle is over. Good prevailed over Evil....

Pre-chapter 9 and chapter 9 integrals have their differences as you have seen in the examples. Yet, u-substitutions are used in almost all of the integrals, maybe not right away...but somewhere in the middle, after things have been simplified.... Yes, the battle with integration seems to be getting harder and harder, but there is a new hero, Tables. His motto is, 'Look up the form, plug the values, and there's your answer.' So the quest continues to conquer integration, but especially his ruler, Calculus. —P. Quesada

Lois Yamakoshi, *Instructor, Mathematics*

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Working Hard is Not the Same Thing as Working Smart

Faculty often bemoan their fate when they encounter students stridently arguing for a better grade on the basis of the amount of hard work they put into studying for a test. The poor faculty member is faced with the odious task of explaining that working hard is not the same as working effectively; that is, being a strategic learner is more than simple persistence. Students must know that it is not enough to work hard; they must also work smart.

Working Smart

Working smart means using study and class times advantageously. It means knowing about different strategies and skills that can help us to be more effective at making what we want to learn both understandable *and* memorable. We used to think of memory as simply a set of two related mental storage places—a short-term storage place and a long-term storage place. Now many educational psychologists conceive of memory more as a continuum, ranging from extremely short-lasting memories to extremely long-lasting memories. For example, if you call for information from a phone booth and you do not have a pen or pencil, you might try to just repeat the numbers quickly and dial the number as soon as possible. However, if someone comes along and asks you for some change, it is likely that you will forget the number and have to call information all over again. This is a very, very short-lasting memory task. Now let's move a bit along the continuum. Let's say you want to pick up a few things at the grocery on your way home from school. It would be useful to remember the list until you go home tonight, but you certainly would not be interested in remembering this list forever. Let's keep going . . . as faculty, it is adaptive for us to remember our classroom assignments for a quarter or semester. However, unless we teach in the same classroom or lab all of the time, we do not need this information forever. In fact, remembering this information from previous semesters could interfere with our getting to the right classroom on time this semester! At the other end of the memory continuum, in long-lasting memory, we find things like important information and understandings in our field. At the extreme (or very, very long-lasting) end, we store things like our name, where we were born, whether we have children, and so on.

Part of a student's task is to determine where on the memory continuum they need to store what they are attending to or trying to learn. This relates very closely to the student's goal for the learning task at hand. Many students think that meaningful learning involves storing things in the lower end of the short-lasting portion of the memory continuum. They do not realize that information stored here is just held onto temporarily. This is like mental rental space, and it is very subject to forgetfulness. We can hold onto things stored here for only a brief time before they are simply forgotten or new information is moved in and pushes out the old. Have you ever heard a student say that they knew the information for the test but then forgot it right afterwards? It is most likely that they did not really learn the material, they just held onto it in the lower, or rental space, portion of memory, and then forgot it as they tried to learn new things and moved new tenants, or information, into the rental space. Things stored in other parts of the memory continuum, particularly in the long-lasting portion, can be remembered for longer periods and can be used in future recall, problem-solving, learning, or decision-making tasks.

Meaningful Learning

Meaningful learning involves understanding and moving what we want to learn along the memory continuum, out of rental space. How far we want to move it will depend on our learning goal and the perceived present or future utility of the material we are trying to learn. Once we determine how important, or useful, the material is or will be to us, we must decide how we are going to try to make it meaningful and memorable. There are a number of different strategies we can use to help ourselves learn, and all of them have a number of characteristics in common. *First*, they are always goal-directed activities. Again, if the learner is not clear about his or her goal for studying or learning, then it will be difficult to pick an appropriate strategy for reaching the goal. *Second*, studying and learning strategies are intentionally invoked, which implies at least some level of conscious thought as well as active selection. To be a strategic learner requires being an active learner who thinks about how to approach different learning tasks. *Third*, studying and learning

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strategies require effort and time, and often involve using multiple steps. *Finally,* they are not universally applicable. This is often very difficult for students to learn. A student's goals, his/her familiarity with the material, the context, the content, and the task conditions all interact to determine appropriate strategies.

Strategies For Generating Meaningful Learning

In general, strategies for generating meaningful learning help students to think about the material in ways that help their understanding and their storage of the material in memory. Included here are a number of common strategies students can use to help themselves learn effectively and efficiently.

1. *Creating analogies—looking for similarities or resemblances between two or more things.* In general, learners use something they already know, something that is similar to what they are trying to learn, to help make what they are trying to learn more understandable. This is a very powerful way we can use reasoning to try to establish meaning for something we want to learn and remember. For example, being a strategic learner is similar to being a manager of one's own learning. By using this analogy, it is easier for students to understand (and for us to teach) the varying roles and responsibilities of a strategic learner.
2. *Applying new knowledge—using new knowledge with different task materials in different contexts.* This helps students to clarify and consolidate their new knowledge as well as to integrate this new knowledge with existing knowledge already in memory. Examples of this method include any type of practice such as completing homework assignments; working extra problems; thinking up sample questions and answering them; or asking the instructor for additional practice work, or to give another example or two in class.
3. *Transforming the new information—putting the new information into your own words (paraphrasing), or summarizing it in your own words.* This strategy helps students to build meaning by highlighting and consolidating their new understanding. In fact, many educators do not consider that there is any understanding until students can at least paraphrase or summarize new information. The more the new knowledge is used and transformed, the more it will become part of their useable knowledge base and get moved along the memory continuum. Other methods in this category include creating diagrams, pictures, or charts of the material the student is trying to learn. These can also help many students to see the relationships among the new bits of information as well as the relationship to old knowledge already in memory.
4. *Teaching the information to someone else—using some form of cooperative learning, peer tutoring, or group work to help consolidate and integrate new knowledge.* We have known for a long time that the person who often benefits the most in a tutoring situation is the person doing the tutoring. By teaching the material to someone else, we deepen our understanding of the material and think about effective ways to learn it. This not only helps us with present learning but it also makes us more aware of our learning strategies and helps us with future learning.
5. *Comparing and contrasting—looking for similarities and differences between new information you are trying to learn and existing knowledge.* This method not only helps to make the new information more meaningful, it also helps to distinguish it from existing, similar, or related knowledge. For example, by comparing and contrasting this method with using analogies, a student could gain a better understanding of the nature and appropriate use of both methods.

The Metacurriculum

The term metacurriculum refers to a learning-to-learn curriculum that is implemented along with the regular course content. The learning strategies portion of the metacurriculum would involve teaching, modeling, and reinforcing the use of learning strategies. We can teach these strategies by direct instruction during class or lab times. For example, in the early sections of a course, we could set aside 15 minutes per week to discuss strategies that seem most helpful for the type of content we teach. We can model the use of these strategies by overtly discussing them as we use them in our own teaching. When we use an analogy to help explain a complex concept, we could also point out the process we are using and why it is helpful for generating meaning. Finally, we can reinforce students' use of strategies by giving them direct feedback and discussing ways different students studied for the evaluations or tests in our class and the impact those strategies had on their success.

Claire E. Weinstein, *Professor, Educational Psychology*

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Suanne D. Roueche, Editor

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Hosting the World: A Local International Visitor Program

The many miles and cultures between Karachi, Pakistan, and Hot Springs, Arkansas, disappear for a while, as Zahid Hussain cruises Lake Hamilton on a 7 a.m. breakfast boating excursion with his American hosts. It is a relaxing time for Hussain and his travel partner, Ashok Sharma of New Delhi, India. Impressed by the natural beauty and peace of the lake, they encounter a dramatic contrast to their recently completed journalistic assignments of covering Operation Desert Storm.

It is the Fourth of July holiday. Breakfasting on homemade cinnamon rolls and fruit, the international journalists find the current assignment as guests of the local community college's president a refreshing change. The explosions and crowds the visitors will experience later in the evening will provide important comparisons and contrasts as they witness their first celebration of small-town American ideals and heritage.

Hussain and Sharma are important international guests to Hot Springs, as were the dozens before them since 1988. Sponsored by the United States Information Agency, under the auspices of the International Visitor Program (IVP), these up-and-coming world community leaders and dignitaries travel the United States for 30 days to gain direct knowledge and experience of the culture. The visitor program is designed to give foreign leaders the opportunity to meet with American counterparts and become acquainted with U.S. customs and people.

To allow for wide exposure and experiences, the visitors are scheduled by the sending agency in Washington, D.C., to visit a variety of U.S. locations, large and small, rural and urban. Each traveler typically visits six to eight communities for a few days of professional appointments, meetings, and hospitable visits in the homes of local townspeople.

A Typical Visit

The hub of the local Hot Springs International Visitor Program is Garland County Community College. The college's Department of Community Services is in charge of the development, planning, and implementation of the program, which also includes dozens of local volunteers.

Tetsuma Esaki, the son and assistant to a high-ranking Democratic party leader in Japan, was one of the program's first official international visitors. Well before Esaki landed in the U.S. for his tour, he was identified by U.S. embassy officials in Japan as an up-and-coming leader of international importance, then recruited to apply to the visitor program. Once the application and nomination were submitted to and approved by the U.S. Information Agency, Esaki was scheduled for a definite 30-day period of travel.

Working with national program officers, Esaki set a preliminary visit schedule to include specific areas of the U.S. Upon arrival in Washington, D.C., Esaki met his assigned escort and interpreter, then adjusted and confirmed his visits to several U.S. cities. His specific interests included meeting with professionals who could explain the U.S. political system and the role of political parties, visiting a rice farm, meeting with education officials at all levels, and meeting with religious and minority leaders.

Some weeks before Esaki's arrival, notification came from Washington, through the state IVP office in Little Rock to the community college in Hot Springs, that Esaki would like to spend three of his travel days in Hot Springs. A brief biography and visit theme were forwarded to GCCC, and the local system went into motion.

The college called upon local volunteers to provide professional appointments, home hospitality, and tourist activities. The press was notified, and within a few days a visit itinerary was committed to paper.

By the time he reached Hot Springs, Esaki had been in the U.S. for two weeks and had visited four other communities. He and his interpreter were lodged in a historic downtown hotel and escorted from appointment to appointment by local volunteers. During his first day in Hot Springs, Esaki met with a newspaper reporter and a photographer, then with a public school instructional supervisor, a superintendent, and several teachers. Esaki and his interpreter had some free time the first evening ("unscheduled" time is important since visitors often are over-scheduled and weary). The next day, he met with the district representative of a U.S. representative and with a national park superintendent, had lunch with business and government leaders, and spent the afternoon boating with college administrators.

The last two evenings were spent in the homes of Hot Springs families. Each family provided traditional

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regional foods; and stories were exchanged about families, love, life, war, customs, poverty, hopes, and dreams. Cultural barriers seemed to melt in the warmth of the sharing experiences.

Program Benefits

Hot Springs and Garland County Community College benefit from hosting international visitors. People from other cultures and countries are relatively uncommon in this area, and it is remarkably instructive for students (college and grade school) who are exposed to the visitors through classroom visits and presentations.

Local professionals are often surprised to discover that the visitors have positive, valid perspectives to offer community leaders who are grappling with numerous civic issues and administrative concerns. The community and the college enjoy the publicity and the extensive media coverage that accompany the visitors. The program brings some new revenue to the local economy (though negligible), since the visitors are funded by the U.S. government. An international newsletter maintains contact with the visitors and keeps interest high for hosting other visitors within the local community.

Very few local experiences allow for contact with such a diverse group of successful, intellectual, hard-working leaders from such a variety of professions and cultures. In the words of one local host, "It's quite a trip."

Steven L. Johnson, *Director, Community Services*

For further information, contact the author at Garland County Community College, # 1 College Drive, Hot Springs, AR 71913.

* * *

Letter Writing: An Alternative to Term Papers

A common student complaint about philosophy courses is that they don't seem to have any relevance to real life. To address this concern, I require students to write a letter on some controversial topic, rather than writing the typical term paper. They may not write on the most common issues, such as abortion and euthanasia, but must read the newspaper to find issues that are surfacing as "new" news.

Students first submit a one-page topic sheet and declare the issue about which they are writing, the position they are defending, and the recipient of the letter. If this assignment is completed satisfactorily, they prepare a rough draft, then the final letter. The letter must be typed in correct business letter format and submitted with a stamped envelope. [I assume responsibility for mailing all letters.] Finally, each student reads his/her letter to the class and then fields questions.

This assignment is a useful alternative to the term paper:

- It requires students to form a clear and concise position on some contemporary issue.
- Students put extra effort into completing this assignment, and the quality of the finished product is typically quite good. (Students often do not mind turning in mediocre term papers to their instructors, but they do not want to send off a poorly written letter to an important person.)
- Students get to participate in democracy. For many, this is the first time they have written a letter to the editor of a newspaper or to a politician. It gives them more confidence in expressing their thoughts and beliefs.
- It is much more enjoyable for the instructor. The instructor will have new and fresh topics to discuss and debate. This certainly is better than having to read the 367th paper on abortion that sounds curiously like most of the others.

This approach could be used in a variety of courses: in a logic course, to stress the importance of good argumentation; in an ethics course, to emphasize issues that have a moral or ethical dimension. Students feel this is a valuable learning experience, and some contact me the following quarter to share the letters *they* received. Getting a return piece of mail helps students feel that they, indeed, have participated in the world and have moved from being spectators in it.

Christopher J. Wilson, *Instructor, Humanities*

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Suanne D. Roueche, Editor

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An Individual Approach to Sharing Cultural Diversity

The Faculty/Staff Development Committee of San Diego City College discovered that one of the most successful means of encouraging understanding of our cultural diversity was felicitously also the cheapest and easiest to execute.

Our first attempts at developing multi-cultural understanding were to hire nationally known speakers—Shirley Chisholm, Luis Valdez, and Jaime Escalante. Although these speakers were outstanding and highly motivating, they were also expensive—and cost has become more of a consideration in times of declining funds.

The committee then tried a workshop approach. The college hired two experts in the field of multi-cultural understanding to conduct small group workshops on our campus. The workshop facilitators tried several approaches to encourage understanding of the problems and attitudes of people in other cultures. Unfortunately, their program turned out to be counterproductive. Several of our faculty members walked out of the workshop because, ironically, they felt that it reinforced cultural and racial stereotypes. There were rancorous meetings for several days after the workshop.

As a result of these experiences, the Faculty/Staff Development Committee gave itself the task of designing a creative program which would be cost-effective, promote intercultural understanding, break down stereotypes, and be interesting and fun.

The idea was to present cultural diversity from an individual point of view. As F. Scott Fitzgerald wrote in the introduction to his short story "The Rich Boy":

> Begin with an individual, and before you know it you find that you have created a type; begin with a type, and you find that you have created nothing.

We decided to create a program which would begin with individuals. We would let the "types" fall where they may. Our plan was to select individuals from our college "family" who would make informal presentations on their own lives. We would not burden them with the responsibility of presenting the experiences of an entire culture. We would leave any generalizing to the audience.

To achieve this goal, we planned a series of presentations featuring people from our faculty, staff, and administration. Each presentation would center on one ethnic, racial, or cultural group. The presentations would occur during FLEX weeks, which are periods set aside by colleges in California for faculty and staff development activities. In order to avoid competition between the groups, we scheduled only one presentation per semester.

We have completed three of these presentations so far. The first focused on Asians, the second on African-Americans, and the third on Hispanics.

Participants were asked to talk about themselves as individuals—to talk about their upbringing, their education, and their families. They were discouraged from discussing their ethnic background unless it had direct bearing on their personal lives. This was not to be a lecture on the Chinese in America, for example.

To make the presentations more concrete and lively, the participants were also asked to bring family pictures, short home videos, music, and ethnic food.

The first presentation was on Asians. The presenters were a Chinese-American automotive teacher who was born and raised in San Diego's Chinatown, located just a few blocks from our college; and a Vietnamese-American math instructor who came to the United States as a refugee. (Japanese-Americans were represented in a more formal presentation which occurred later in the day.) The presenters brought clothing, family memorabilia, objets d'art, photos, videos, and food. One of the presenters brought a Chinese dragon costume, which he and his two sons wear while performing Chinese dragon dances. The response to this first presentation was excellent. The people who attended commented about the warmth, fun, and informality of the session. The only negative comment was that there should have been more than two presenters.

The next session was on African-Americans. The committee selected five people from our faculty and staff—one man from British Guiana, another from Uganda, two women from rural areas in Texas, and one from urban Washington, D.C. Their presentation was upbeat. Although several of these people were activists in African-American campus and national issues, they held fast to the personal experience concept. They related experiences about their childhood, education, and current domestic lives. They brought in photos, videos, and

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American soul food—using the food as a lesson on the history of African-Americans in the United States.

The third presentation was on Hispanics or Latinos. The participants represented many different nationalities, genders, and religions. They were men and women from the United States, Mexico, Nicaragua, and Argentina, with a variety of native American and European roots. They had Protestant, Catholic, and Jewish backgrounds. One of the major points made was that Spanish-speaking people are no more alike than are English-speaking people. Hispanics represent many nations, each speaking a variation on the Spanish language and comprising different mixtures of races, religions, and ethnic groups.

Our next presentation will be on Pacific Islanders. We plan to invite people with Filipino, Hawaiian, and other Pacific Island backgrounds.

As the person responsible for organizing the events, I encountered no difficulty in finding people to participate. Early on, the only minor difficulty was convincing participants that other college faculty and staff would be interested. But because of the high attendance at the past three events, this is no longer a concern. As a side note, although the college was prepared to pay for the food, none of the participants requested reimbursement. One woman said that the warmth of the response was so overwhelming that asking for money would have ruined the experience.

From these presentations we learned that people from our own college family are at least as effective in presenting elements of cultural diversity as outside experts, and we can effectively learn about cultures through concrete experiences of individuals we know.

Sid Forman, *Learning Resource Specialist*

For further information, contact the author at San Diego City College, 1313 12th Avenue, San Diego, CA 92101.

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Laughing Letters: Encouraging Results in Trades Classes

Basic business letter writing is a short module in Yukon College's Trades Communications, a course which also includes such serious business as writing personal resumés and videotaping mock job interviews. An instructional method, adapted from years of teaching English at all levels, has worked successfully with my classes of mechanics, surveyors, and carpenters.

I begin the unit by teaching the standard parts of a business letter, then format, tone, and writing style. The first assignment is to write a BAD business letter, for which I give full marks. There are two conditions: students may not be offensive in any way and must identify every "mistake." Some examples: letters written in pencil on three-holed lined paper; letters with half-inch top margins and three-inch side margins; letters full of spelling and punctuation errors.

The remainder of the assignment (a memo, thank-you letter, sales letter, complaint letter, and "bad news" letter) must be typed on a computer. The format and the mechanics of the letters must be error-free, but students are encouraged to use their wildest imaginations to create the content. Students who cannot use humor very easily are encouraged to write regular letters. There are always a few who choose the latter option, and both types are displayed on a large bulletin board in my classroom.

Some humorous examples: a memo advertising a special "Electro-Shock Injector" for a trades colleague who finds that his students fall asleep during math classes; a letter from a robot in the Milky Way galaxy complaining that the unit cannot predict the weather accurately because "the Senior Weather Creator suffers from Terminal Collision Syndrome." More realistic letters: complaints about the lack of student parking and plug-ins; suggestions for eliminating the noise coming from the carpentry shop; and creative ways to serve food in the cafeteria.

Unlike instructors in business courses who produce "real" scenarios, I have the luxury of encouraging laughing letters because the ultimate goal of my module is to learn the process and the rules for writing a business letter. A binder full of excellent student letters and the laughter I hear as students read each other's work is proof that these trade students have, indeed, learned the process of writing a business letter.

Mary Lou Smith, *Instructor, Related Subjects*

For further information, contact the author at Yukon College, Box 2799, Whitehorse, Y.T. Y1A 5K4, CANADA.

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A Structured Approach for Improving Student Success

After teaching general psychology for the past 20 years to approximately 6,000 students, I have found that student success can be significantly increased by employing a variety of structured support strategies. While the following techniques can be used at both community colleges and universities, the most dramatic enhancement of learning can be seen at the community college level, where large numbers of students are at risk because of personal difficulties and insufficiently developed learning skills. The following strategies have been extremely useful:

1. **Presentation of a comprehensive syllabus**—Structure begins on the first day of class as each student is given a six-page syllabus which clearly details all course goals, objectives, and procedures. At the end of the syllabus is a listing of each lecture with appropriate readings.
2. **Lecture outlines**—At the beginning of the semester, students can purchase a packet of lecture outlines from the college bookstore. The outline has blank spaces in which the students can add more information. Some students prefer to fill in these forms during the lectures; others prefer to complete them as they are reading the textbook. These outlines are designed as a supplement to the lectures and text rather than as a substitute.
3. **Coach classes**—Prior to each exam, several two-hour coach classes are scheduled. These review sessions are led by former students who have been selected for their academic performance and charisma. These sessions leaders are compensated for their efforts: a small remuneration and the intrinsic growth they experience from this teaching-learning situation. The leaders review the study-guide material with the students, and they essentially are given free rein to develop their own teaching methods.
4. **Completion of academic intervention forms**—If a student does poorly on the first exam, I complete a form which our college employs to activate an array of support services. I can refer the student to a counselor, reading lab, writing lab, math lab, or handicapped services coordinator. A week or two later, I receive feedback from the appropriate referral source.
5. **Meetings between class instructor and counselors**—To further facilitate the intervention, I meet with the counseling staff after the first exam and make them aware of all those students who are experiencing difficulties. We discuss probable reasons for the student's poor performance and develop additional plans.
6. **Peer tutors**—I also refer any student showing signs of academic problems to a peer tutor. This individual is typically a former psychology student who has had some tutor training. In addition to focusing on content material, the peer tutors serve as good role models and provide valuable tips on improving study techniques.
7. **Encouragement of student feedback**—I make it a practice to strike up conversations with students before class, after class, and during chance encounters. Typical questions are: "How's everything going?"; "Are you keeping up with the reading?"; "I was concerned about your performance on the last test!" Instead of simply waiting for students to come to my office with their problems, I try to become aware of theirs as soon as possible.
8. **Religious attendance taking**—In years past, I was often very casual in attendance taking, especially after the first few weeks of the semester. My experience has been that religious attendance taking gives a sense of seriousness to the classroom experience that is reflected in student persistence and performance.
9. **Flexible sections**—Since I normally teach four sections of general psychology each semester, I often allow students to permanently or temporarily switch sections when they have scheduling conflicts caused by work, health, or family issues. Sometimes we even work out arrangements with other instructors so that students can keep up with the class.
10. **Sample essays**—Each of my exams contains 40 to 50 multiple choice questions and one essay. Prior to the exam, I give students sample essays that have

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been assigned the grades of A, B, C, D, and X. This feedback serves to make them more aware of my level of expectation.

11. **Structured form for grading of research paper—** At the end of the course, each student submits a seven-page research paper which surveys a topic within the field of psychology. Each paper is returned, with a checklist, rating the paper on content, organization, style, and mechanics (21 ratings in all). Areas of weakness are commented upon in greater detail. Students pay attention to this feedback and profit from the comments.

With these support strategies, I retain a very high percentage of my students (e.g., approximately 86% of my 150 students during the 1989 fall semester). A high retention rate *can* be attained while maintaining excellent academic standards.

Ira B. Albert, *Professor, Social Sciences*

For further information, contact the author at Dundalk Community College, 7200 Sollers Point Road, Baltimore, MD 21222.

Using Student Assistants in the Classroom

With heavy teaching loads, an all-too-common lack of funds for adequate support staff, and poorly motivated students, one question that arises is how faculty might obtain better teaching assistance within rather severe parameters.

Of course, there is no adequate substitute for having sensible teaching loads, receiving generous funds for hiring good support staff, and teaching students already well-prepared academically and highly motivated. But one strategy has proved helpful in addressing at least some of these concerns—using selected students in the classroom as student assistants. Assistants can list announcements on the blackboard; follow up on student absences by telephone or letter; set up audiovisual equipment in the classroom; confirm the visits of classroom speakers; copy materials for teacher and student use; coordinate small-group study activities; perform a variety of office tasks; work with students who need special assistance outside the classroom; and so on.

Over the last four years, I have successfully utilized assistants in my political science classes at Brookdale Community College (a suburban college with approximately 10,000 daytime and nighttime students, and an average 30 students per political science class). Student assistants help with selected duties, give me feedback on various aspects of my teaching techniques, and serve as role models for other students.

During one of the first sessions of each class, I identify prospective assistants. I ask individual students about their interest in assisting, and then I meet with each of them after class for an interview. Selection criteria include: that they be political science majors; that they have a strong academic record at BCC; that they be friendly and outgoing; and that they be mature and responsible.

Once selected (for the semester, but subject to rotation if their work proves to be unsatisfactory), they must attend a weekly meeting of all student assistants (to evaluate the successes and failures of class sessions and assignments, and to discuss how subsequent sessions and assignments can be improved) and must meet with me for 10 minutes before each class session in which they will assist (to receive last-minute instructions).

The rewards for student assistantship are many, as evidenced by the enthusiastic response each semester by qualified students applying for the job, as well as comments once the work has been completed. Assistants develop a strong sense of responsibility; they may be all the more encouraged to pursue a career in political science; and the work serves as a source of peer stimulation and learning for the class as a whole (often serving to break down stereotypes when members of various ethnic and gender groups serve as assistants). Finally, successful assistants receive an additional grade for their services, as well as letters of recommendation when transferring to another institution or entering the world of work.

This strategy must be employed with considerable planning and care. Special attention must be given to defining suitable work conditions and responsibilities for assistants, and selecting appropriate awards.

Widely varying needs and circumstances dictate how and when student teaching assistants can be used most appropriately. Yet in a general sense, assistantships can be a mutually rewarding and beneficial experience for assistants, students, and instructor.

Tom Richards, *Team Leader, Political Science*

For further information, contact the author at Brookdale Community College, Newman Springs Road, Lincroft, NJ 07738.

Suanne D. Roueche, Editor
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Writing in the Disciplines

In many colleges, the responsibilities for teaching writing are placed predominantly on the English department. Faculty in other disciplines frequently feel uncertain about assigning and assessing written work. They are unaware of techniques for using writing as an integral part of the teaching and learning process. As a result of a writing across the curriculum movement at Santa Fe Community College, faculty in the arts and sciences disciplines effectively use writing to enhance the teaching and learning process.

In recent years, many colleges have established writing across the curriculum programs to remediate deficiencies in students' writing and thinking skills. Some have established a "writing center" where students and faculty can go for help. Students are given help with writing assignments by tutors at such a center, and the faculty gain information on assigning and grading written work. Other colleges have broadened the responsibility for teaching writing to all faculty. Santa Fe Community College chose to involve faculty in every discipline in the writing movement because writing is seen as a necessary skill to be taught and as a tool to teach thinking and collaborative learning.

The goals were: to infuse the practice of writing into all disciplines, to use writing to foster learning, to stress the importance of collaboration in the teaching/learning process, and to foster scholarship among the faculty by using writing as a vehicle to share good classroom practices.

A series of workshops were held over two years (1988-1990). Seventy-two of 106 arts and sciences faculty attended these workshops over the two-year span. Every faculty in the physical sciences department, 83% of biology faculty, and 80% of the English faculty participated in the writing workshops. The creative arts faculty had the fewest number of participants (only 1 out of 11), and 73% of the humanities faculty took part in the workshops. The social sciences and history faculty had the same level of participation (64%), and 52% of the mathematics faculty took part in the workshops.

A possible reason for the low participation rate by the creative arts faculty may be that they are more interested in visual and physical performance as forms of expression. However, the one faculty member from the creative arts area who did take part has integrated journal writing into her classes, requiring her students to generate ideas and think through the process for creating a work of art. In the same way, on a surface level, writing may not seem to be an integral part of teaching mathematics, which may explain the low level of interest; but for those who did attend, the workshops gave them another tool to add to their teaching repertoire.

In April 1991, a year after the last workshop, the following question was sent to each participant who was still teaching at the college: "In the past two years, we held a series of workshops on writing for the arts and sciences faculty. You were one of 72 people who participated in that project. Would you take 5 to 10 minutes and do a 'free write' on ways you use the techniques you learned at that workshop?"

The response rate was 81%. The most frequently mentioned technique faculty found useful was the free write. This technique, which uses writing to generate ideas, has only a few rules:

- ***It is timed:*** write for 5 to 10 minutes without stopping.
- ***It encourages free association:*** the writing can be completely free or it can focus on a particular topic.
- ***It is fast:*** erasures, corrections, or thinking about what to write next are discouraged.
- ***It is private:*** no others will see the writing unless you want them to see it.

For many, this was a new technique, and there were as many different uses as there were respondents. Several faculty commented on the useful feedback they received when they asked their students to summarize the day's lecture. This gave them insights into the students' perceptions and understandings. One faculty "uses the five minutes at the end of every class for students to commit their thoughts to paper. These writings form the second part of each day's notes. The first part is the record of what happened. The second is what it means and how it feels."

The second most frequently mentioned technique was the use of the journals. A history instructor suggests to his class that they keep a journal for themselves, and include the names of people they meet and their impressions of people and events. "Imagine 50 or more years after their death some great-grandchild—born years removed from

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the author—will be able to know their ancestors intimately, and will wish they had known that person personally. THAT'S HISTORY!"

Several mentioned personal benefits from the workshop. One faculty mentioned that he "wrote small 'abstracts' of a pending lecture." Doing so helps him gain insights for preparing his lesson plans. This same instructor has adopted the practice of writing "impressions of each class meeting." This allows him to make a smoother transition from one class meeting to the next.

For those faculty in disciplines other than English, the workshops gave them a greater appreciation for the difficulty in teaching students to write. One humanities faculty uses a "mystery slide" which is shown many times over the course of the semester. At the end of every instructional unit, the students are asked to discuss the same slide in terms of what they had just learned in the unit of the course. At the end of the semester the students' comments are photocopied and given out to everyone. Those who earnestly do the work can see their own growth and understanding of the subjects studied. "Those who did not put in the effort could see what they had lost."

The science faculty has always assigned laboratory reports, but most of them were not in narrative form. Many were diagrammatic, fill-in-the-blank, data displays, and calculations. After the workshops, the vast majority of the science faculty incorporated free writes, journals, and narrative lab reports into their courses. Many faculty mentioned the pleasure of getting to know their students better through their writing. Interestingly, this group took the most risks in assigning innovative writing assignments. A chemistry faculty gives his students an assignment entitled "Living Scientist." He asks them to interview a practicing chemist at a research university in the same town and write a short paper. One student who interviewed her own father gained insights into who he was professionally and understood for the first time why the family had made decisions to move so frequently. The scientists themselves were happy to talk to someone other than their colleagues about what they did as a professional, and the students learned much about the kinds of people who make the discoveries they read about in their texts.

Collaboration, working together in groups to find solutions or create a product, is common in the workplace. Yet in the classroom, such collaboration is not always encouraged. As a matter of fact, we often consider such cooperation "cheating." Ways to use collaborative learning were introduced as part of the writing workshops but have not yet been widely accepted. Collaborative learning requires the instructor to give up some of her control over the class and requires more time than the one-hour class period. The value is that the students take an active role in the learning process. Future projects will focus on ways to encourage more collaboration as a tool for learning.

The workshops did encourage collaborative work among faculty. As a direct result of these workshops, a group of faculty created two interdisciplinary publications. The student arts journal *Tracings*, with writing and art from students in a variety of disciplines, and *The Santa Fe Review*, a journal of writings by faculty and staff, are published annually. The science faculty have also used the writing techniques and collaborative process to revise courses and write competitive grants. They have successfully received two National Science Foundation grants, as well as other state and local grants, using the collaborative writing process.

By placing an emphasis on the importance of writing, providing the opportunities to learn new pedagogy via the workshops, and encouraging faculty to take some risks and try new ideas and methods, the college has made a crucial difference in the quality of instruction students receive. Many faculty, who were already dissatisfied with short-answer and multiple-choice evaluations, have been given new vision to coax their students to write, to use writing as a tool for learning, and to confidently assign and evaluate written work, including essay exams. The techniques of writing to think and writing to foster collaborative work by students have added a new dimension to the course content in many discipline areas.

Heijia L. Wheeler, *Dean, Arts & Sciences*

Barbara Sloan, *Chairperson, English*

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Suanne D. Roueche, Editor
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All the News That's Fit to TEACH

About two years ago I decided that all those excellent articles I read in the newspaper were going to waste. So I decided I would read them to my freshman composition classes. Now, I read the newspaper at the beginning of class when everyone is getting settled or during the last few minutes. This, I think, is good teaching.

- *New words are found in the newspaper.* (Try these: factoid, precycling, Saddamized, videophile, arcology, shifting, glass ceiling, awareness chic.)

- *Good writing is found in the newspaper.* The writing would not appear in a paid-subscription press unless it was good enough to satisfy the readers and the advertisers. The writing is up-to-date with plenty of punch.

- *Community college students have limited milieus.* They may come from towns so small they do not even have a Dairy Queen. They may know plenty about rodeoing and deer hunting but nothing about a recent art exhibit in New York. The newspaper broadens their knowledge.

- *Examples of writing techniques are in the newspaper.* The book or movie review is the same as the evaluation essay. Such articles as "Why Women Aren't Cracking the Glass Ceiling" and "When White Guys Finish Last" explore causes for phenomena relating to the job market.

- *The metaphor and simile can be taught from articles that deal with regional expressions,* such as a recent article listing Texanisms—"as cold as Patterson's peach orchard" and "felt like she'd ironed all night with a cold iron."

- *The acronym shows up colorfully,* such as in a recent article on an organization called PINTO BEAN—People Inclined Naturally Toward Ostentatious Bean Eating.

- *Materials for selected readings are in the newspaper.* Maya Angelou's "Uncle Willie" gets a boost from a nostalgia column about old-time expressions or country stores. An animal rights essay, a common feature in freshman texts, comes to life with an article about animal rights activists protesting bowhunting or the circus.

- *Oftentimes reading the newspaper draws students out.* A humorous column on Cavaricci jeans had one fashion merchandising major standing up to show off her Cavaricci shorts, especially the label. A column on comic books on exhibit at the New York Museum of Modern Art interested a comic book collector.

But, you say, your own newspaper does not really have good articles in it. Even small newspapers usually carry the syndicated columnists. However, I prefer a big-city paper because of the variety of articles. I read from *The Dallas Morning News.* In the past, I have used the *Wall Street Journal* and, for audience study, a small-town paper, the *Diboll Free Press.*

What newspaper teaching does *not* offer is a sense of order, and this is the best part of all. I never know exactly what I'll be reading. It's fresh to me and to the students. And I never know what, if any, response I will receive.

So next time you find yourself reading the newspaper to the cat because you found an interesting article, remember your roomfuls of unenlightened students.

Mary K. Taylor, *Instructor, English*

For further information, contact the author at McLennan Community College, 1400 College Drive, Waco, TX 76708.

It Never Hurts to Ask

In introductory courses, students must learn many new words. Nevertheless, few subjects can cause more blank, bored stares from students than vocabulary lessons. After enduring too many of these vacuous looks, I asked the students for their ideas about how to make learning new words enjoyable. They jumped at the chance to have their say. "Let's play 'The Match Game,'" one shouted. "No, 'Wheel of Fortune,'" another countered. We experimented with each game, enthusiastic smiles replaced the former glazed eyes, and I relearned a familiar lesson: It never hurts to ask!

The idea of playing a game, however, brought a second familiar lesson to my mind: It never hurts to ask yourself whether the game enhances learning or merely entertains. To facilitate learning, I added a detailed structure. Groups would compete with one another according to rules that required the students to pronounce the word, use it in a sentence, and define it. The rules of "Word of Fortune" are as follows:

Step 1: Each team selects a host and a monitor to administer the game. The host goes to another group to select the words, give the clues, and keep the score. The monitor remains in his or her group to ensure that its guest host performs accurately and honestly.

Step 2: The host selects a word from given pages of a vocabulary book, places a blank line on the board for each letter in the word, and writes a clue about a word root beneath the blank letters. The monitor checks the host's work.

Step 3: The team member rolling the largest number on the dice begins the play. He or she rolls the dice each time before guessing a letter and earns the number of points on the dice for each consonant guessed correctly. Rolling snake eyes causes the player to go bankrupt—lose all of the dice points accumulated on his or her round. To buy a vowel, the student forfeits the points on the dice. The play moves to the student on the right of the current player when the current player either guesses a letter incorrectly or completes the play on one word.

Step 4: When a team member guesses the word, he or she may earn double the points on the dice for a correct definition, 100 points for the correct use of the word in a sentence. The instructor judges whether the student's answer earns any of the possible points.

Step 5: The instructor announces the five-minute warning; after that time, no group can begin a new word. Each group completes its current word, and the host and the monitor reach agreement on the scoring. The members of the team with the highest score receive five bonus points on their next test.

Asking paid off! Actively involved in a different approach to learning, the students saw the immediate relevance of the subject. They took ownership of new vocabulary words in a way I never dreamed possible. The reticent and the recalcitrant alike attempted to pronounce the words, use them in sentences, and define them while having fun in an efficient learning structure.

What should I ask for next?

Linda Kraeger, *Instructor, Developmental Studies*

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Suanne D. Roueche, Editor

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Creating Cohesiveness by Celebrating Diversity

As are many parts of the country, San Diego is experiencing an influx of immigrants from all over the world. One challenge for Miramar College is to help these new citizens prepare themselves for adapting to and economically surviving in their new homeland. Additionally, the college is faced with the task of promoting multicultural understanding and acceptance. Multicultural approaches to course subject matter can foster understanding to help overcome prejudices and stereotypes, either conscious or subconscious, about diverse ethnic groups.

A second challenge is to create an educational environment that supports the successful completion of classes by high-risk students. Involving each student's family in his/her education is one strategy for helping a high-risk student survive outside pressures to quit college.

After searching for a way to involve my students' families and promote multicultural understanding and appreciation, I developed the Family History Speech assignment in my Oral Communications class. While this assignment is tailored to the presentation of formal, oral speeches, it can be adapted to classes such as English, history, sociology, psychology, and political science. However, the success of the assignment lies in both the oral presentation of each student's family history and the class questions and discussions that occur after each speech.

The Assignment

Rather than assigning the traditional informative speeches in my Oral Communications classes, I ask that students interview members of their families to learn where they came from, who their ancestors were, and what brought their families to America. Lecture materials cover how to conduct research, how to perform genealogical research, and where and how to obtain this information. I explain how to gather information through interviewing, the types of interviews, and strategies for asking questions and following up on answers. The emphasis of this assignment is two-fold—enabling students to develop useful and necessary research and interviewing skills, and to discover their own personal family histories.

Students are urged to conduct a variety of interviews, preferably in person, with as diverse a group of family members as possible. They are encouraged to interview family friends or people who know or knew members of their families from a different perspective. It is strongly recommended that students either audiotape or videotape all their interviews. Thus, students will have an oral/visual/written archive of their family history, complete with the stories and personalities of the family members they have interviewed.

When the research is complete, each student is to create an 8- to 10-minute informative speech focusing on some aspect of his/her family history—the person or people in their family they most admire and why; the person or people in their family the student finds most interesting and why; how their ancestors first came to America and why; a family custom or tradition the student finds special or touching and why it means so much. Students are asked to attempt to discover what their families hoped to achieve in their new country and whether these dreams were realized. Oftentimes students include what they have learned from those they interviewed and the insights they had about themselves as they went through the process of completing the assignment.

The Results

Students gain a sense of who they are and where they came from. Most important, however, the entire class becomes enlightened about its members, and patterns begin forming.

They realize that underneath the different names, ages, races, religions, genders, backgrounds, and heritages, we have much in common. Students see that people of many different cultural backgrounds desire the same things that they and their families do; they realize that the hopes, dreams, and goals of the different people in class are similar despite the different cultures and backgrounds; they see individuals they can relate to, appreciate, understand, and with whom they can sympathize. In essence, they no longer see stereotypes, but rather individuals.

After the speeches are completed, a strong sense of bonding takes place among class members. Students

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are encouraged to ask questions of each speaker. As a class we celebrate our differences, revel in our traditions, but also learn that we have a common bond. By celebrating cultural diversity, we create cohesiveness.

Leslie Klipper-Gross, *Assistant Professor, Speech Communications & Journalism*

For further information, contact the author at Miramar College, 10440 Black Mountain Road, San Diego, CA 92126.

Bringing Home the Concept Of the NISOD Conference

The idea was born.

This past year our staff development committee wanted to have a collegewide workshop with a specific focus. We were looking for something that would support and encourage teaching excellence and, simultaneously, would appeal to staff and foster further development of positive faculty-staff relationships.

What better way to do this, we thought, than to pattern an event after the NISOD conference concept. After all, we had tried it on a smaller scale with faculty in the past, and it had been successful—anyone who has been to the NISOD conference knows that you return from that event rejuvenated, enthusiastic, and eager to try out new ideas. A "mini" NISOD conference, or "minicollege," as it was finally called, seemed to be what we wanted to establish.

The "minicollege" was developed.

1. ***We advertised.*** We put notices in the college newsletter, seeking ideas for topics and presenters, and we talked to people in the college who had openly acknowledged skills. We were looking for ideas about subjects of interest to a variety of college personnel, focusing on everything from recreational events to computer skills. We wanted to create an event which combined opportunities to learn, relax, and socialize.
2. ***We recruited.*** Once we had topics selected and knew what we wanted to offer, we put out a call for presenters. We advertised for individuals to make 45-minute or 90-minute presentations (or combinations thereof).
3. ***We scheduled.*** Armed with a wide variety of subjects, we tried to schedule them so that, at any given time, there would be offerings that appealed to everyone. This was, indeed, *the* challenge. We achieved our goal by duplicating some events, holding several plenary sessions, and offering at least one event over lunch.
4. ***Again, we recruited.*** This time we were advertising for participants. Word-of-mouth and notices in the college newsletter helped. In addition, we sought and obtained the full support of the administration with a two-day closure of the college.

What were the results?

Over 200 college employees participated in our minicollege, attending sessions that included everything from making a salad to teaching critical thinking. Each presenter left with a certificate acknowledging his/her contribution to the success of our conference. Feedback from all participants was highly positive, leaving those of us on the staff development committee with the feeling that, despite all the work, we would do it again. It served its original purpose and then some.

Kathleen Pinckney, *Instructor, Nursing*

Pat Jacklin, *Campus Manager*

Judy Wray, *Campus Manager*

For further information, contact Pinckney and Jacklin at Selkirk College, P.O. Box 1200, Castlegar, B.C., V1N 3J1, CANADA, or Wray at Selkirk College, 900 Helena Street, Trail, B.C., V1R 4S6, CANADA.

PLAN NOW TO ATTEND NISOD'S FOURTEENTH INTERNATIONAL CONFERENCE ON TEACHING EXCELLENCE AND CONFERENCE OF ADMINISTRATORS.

May 24-27, 1992
Austin, Texas

For more information, write or call: Suanne Roueche, NISOD, The University of Texas at Austin, EDB 348, Austin, TX 78712-1293, (512) 471-7545.

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EcSL: Teaching Economics as a Second Language

A problem in teaching economics is that instructors concentrate so much on the parts (tools) that students lose sight of the mission of the course. An analogy: if we were teaching students how to raise a garden and the student mastered the use of common garden tools—e.g., spade, hoe, fertilizer—but failed to produce a crop, we would feel that we had failed in our task. In the economics classroom we teach students how to construct various models and how to calculate several statistical conditions. The students also learn many principles and laws, each of which is an important tool—but *only* a tool. John Maynard Keynes once explained that "economics is a method rather than a doctrine, an apparatus of the mind, a technique of thinking, which helps its possessor to draw conclusions." The "crop" that economic teachers must produce is to enable students to use the tools of economics to make decisions, e.g., to process data and arrive at independent conclusions.

What Is EcSL?

According to Rendigs Fels of Vanderbilt University, the best model for teaching economics is that for teaching a foreign language rather than that for teaching history or English. Literature on the teaching of foreign languages differentiates between instruction in foreign language and in English as a second language (ESL). In both cases, a strong audio-lingual approach is used in which students hear many repetitions of the new language and are encouraged to use their new terminology often. Many games and physical activities are used in the classroom to individualize student participation. The goal is to teach each student the terms, their meanings, and basic applications within the culture under study. When immersion is used as a teaching technique, the class is only permitted to communicate via the language under study. Field trips to restaurants, medical centers, and/or the native country where use of the language can be tested are critical teaching strategies.

In the ESL model, the instructor teaches English to foreign-speaking students (usually in preparation for future study in which English will be the only language). ESL is a preferred teaching situation because students are immersed in English-speaking situations in most activities and almost all media. ESL students receive constant repetition and rapid feedback in and out of the classroom that reinforces successful usage of the English language. The students are able to apply the language successfully, which motivates them to move more rapidly from simple to complex usage. Because we live in an environment that demands economic decision making from our citizens, encourages movement from simple to more complex economic decisions throughout life, and presents economic data via all media, the teaching approach described herein has been referred to as EcSL (economics as a second language).

The Hazard Community College Approach

Hazard Community College economics students represent a cross-section of all students. Their ages, experiences, abilities, goals, and interests in taking a principles of economics class differ. We have attempted over the past several years to create a situation in which students with various levels of skills and abilities have followed a systematic approach to learning. The results are (1) more students know more about economics after taking the class; (2) they are better able to apply economic concepts in their daily lives; (3) they are more confident about using economic terms and tools; (4) they have learned to work in a more cooperative, less competitive environment; (5) they see a stronger relationship between economics and life; (6) they are better prepared to perform their role as citizens; (7) they use self-questioning study techniques; (8) they use rehearsal study techniques; (9) they use teacher-provided schemas for learning economics; and (10) they prepare their own schema and present it for approval to other students before turning it in for credit in the course.

But Students Must Know the Terms . . . Right?

We have used a combination of mastery learning and personalized systems of instruction to prepare students for recall, understanding, and application tasks.

Class Activities

1. Introduce the class as an exciting but very difficult course of study.

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2. Promise students an A, B, or C grade if they succeed at three different aspects of the class.
3. Write each student's family to tell them that the student is taking a very difficult course, and their support is needed if the student is to be successful.
4. Use the textbook's test bank to prepare three versions of each test the students are to take (four tests, 40 multiple-choice items each).
5. Use a Scantron grading machine to quickly score each version of the test. No grade is recorded until the student scores 80% or higher.
6. Students who score less than 80% complete correctives outside of class. They then exchange their old test, answer sheet, and correctives in our learning center for another version of that particular test. They take the test in the learning center. We score it on the Scantron grader and give them the results as they come into the next class meeting. If necessary, they do correctives again and take another version of the test until a score of 80% or higher is attained.
7. After each first exam, we move on to new material during the next class meeting. Students' deadline for scoring an 80% or higher on each test is the next scheduled exam. Students must spend considerable time on economics in order to meet this schedule. Attendance increases because students cannot miss classes and complete their tasks. In addition, student attention and participation change drastically after the first test. Because students recognize the importance of precise language in using economic terminology, they ask a good many clarifying and application questions in class. They want to be specific about the terminology and avoid doing another corrective if possible. In the process they become active learners.
8. We write their advisors (with a copy to the student) and tell them how pleased we are with the students' efforts and their scores to date. We ask them to encourage their advisees as they meet with them.
9. Class time consists of answering student questions about the reading assignment, showing application of concepts, and having them perform tasks—e.g., construct a demand curve, calculate elasticity of demand, or construct a field of indifference curves. For grading purposes, they complete daily application assignments which are turned in at the end of the term in a notebook.
10. To teach analysis, synthesis, and evaluation learning, we require a paper from each student explaining a particular product and its market (timber, tobacco, coal, etc.) This causes the students to search for economic data from various media, making them more conscious of their existence.
11. When students finish their papers, they submit them to a peer review team of three other students. Each team member will read each paper and offer suggestions for improvement. One student will sign off on the use of language, another will sign off on spelling and punctuation, while a third student will sign off on the use of economic terms, examples, and concepts. The students then rotate assignments on the next paper. The students are responsible for collecting economic data, using newly acquired economic tools to present their data, and, most important, arriving at their own conclusions.

Using this approach to teaching economics, we have found that the focus of the entire class is on learning economics and is more like a work environment than a typical classroom. Our job is one of encouraging, praising, clarifying, and assisting; we have become facilitators.

Richard Crowe, *Professor, Economics*

For further information, contact the author at Hazard Community College, Highway 15 South/One Community College Drive, Hazard, KY 41701-2402.

Celebrate with us!

The 1992 International Conference on Teaching Excellence and Conference of Administrators is scheduled for May 24-27.

Speakers will include **Donald Phelps**, Chancellor, Los Angeles Comunity College District, and **Beverly Simone**, President, Madison Area Technical College. Six preconference sessions will be featured, plus special sessions by **Wally Cox**, College of the Canyons, who will provide instruction in country-and-western dancing. The Conference of Administrators; 1992 NISOD Excellence Awards presentation; Monday-evening Mexican buffet and dance; and tours of Austin, Texas Hill Country, and San Antonio round out the schedule.

For more information, contact Suanne Roueche, Director, NISOD, The University of Texas at Austin, EDB 348, Austin, TX 78712, 512/471-7545.

Suanne D. Roueche, Editor

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Writing to Learn Math: A Dialogue

Editor's Note: *This article is a recent dialogue between a writing instructor and a math instructor at Jefferson Community College.*

Rita: Using writing as a means of knowing, not just as a way to demonstrate what you know, has long been appreciated by teachers of composition (naturally) and teachers in other disciplines such as history, literature, and the social sciences. But, more recently, mathematics teachers have begun to discover writing as a pedagogical tool for teaching both basic and advanced math.

Carrie and I discovered, somewhat by accident, that the processes inherent in writing were similarly efficacious for both our disciplines, composition and math. Sharing an office complex we regularly observed and overheard each other in conference with our respective students. The tone and structure of our conferences were amazingly similar: we defined concepts, asked for clarifications, demonstrated process, invited questions, facilitated comparisons and contrasts, and encouraged analysis.

As Plato discovered centuries ago, open dialogue is at the heart of learning. I tell my writing students that they must learn to "talk to themselves" to become good writers who can take their ideas through the personalize/objectify dialectic that leads to discovery and clarification. This kind of dialogue, I believe, is what Carrie and I heard each other encouraging as we attempted to meet our students' needs.

As we worked through writing/math anxieties, we tried to meet the **same** needs: the need to see relationships, to recall, to summarize, to forecast. In the process of the conference experiences, we heard our students validating or amending their classroom experiences, leaving ideally with better strategies for learning.

Writing was the way to make these conference processes concrete and ongoing, a way to practice those skills that cognitive research indicates are necessary for all learning. This research stresses the essential relationship between thought and language. If we can verbalize it clearly, we can know it clearly. Our conversations about this spurred Carrie and some of her colleagues to expand on the writing they were already having their math students do.

Carrie: In the past several years, I have found that students want to memorize a mathematic formula or process until the test date and then promptly forget the process. However, in math classes, the next information taught very often hinges on what was just taught, and hence the process of learning mathematics breaks down if students use only memorization skills. In trying to coerce my students to retain more of the processes I was teaching, I resorted to verbalization of the concept. At first I used term papers in applied courses such as Finite and Business Calculus. Then I had students write their own story problems.

Rita: Writing "story problems" is just one of many strategies composition research Ann Berthoff lists for her students in preparing a "double-entry notebook." Designed as a tool for critical thinking for writing, the notebook provides a way for students to work through an idea and then think about the process they used. On one side of the notebook, the students write observations, ideas, summaries, even make drawings to record their learning. Then, on the opposite side, perhaps later, they re-think their first entries, ask questions, make corrections or amendments, and reach conclusions.

Carrie: Adapting Berthoff's idea, I had the student keep a written journal on the left side of the page which explained what he/she was performing mathematically on the right side of the same page. The student was to use names of the principles and laws and to label steps or processes with which he/she was not familiar or comfortable. These latter comments were to be asked about in the next class meeting.

At the end of certain sections, exercise sets, or chapters, I requested extra assignments. These included comparisons of two chapters or perhaps just two problems and categorizations of problems such as word problems into distance, geometry, motion, mixture, or consumer categories.

The notebook was very useful to both the student and me. With mistakes corrected, the notebook became the student's individual textbook for the course. Each chapter had numerous worked problems—each with an explanation that this particular student could read and understand. For myself, I could read any page and see whether

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a student was having difficulty understanding the process being taught. In the privacy of my office, or in the learning lab, I could discuss the problem with the student in his/her own words and be more apt to correct it.

The notebook **does** take considerable time to read and evaluate, but the same benefits from verbalizing math concepts can be obtained in other ways. In a recent semester I used a mini-notebook idea which I called the "Concept Problem." One or two weeks before the exam, students would be given problems which included specific mathematical concepts over which they would be tested later. The students were to complete these problems using the double-entry format.

These problems were collected and returned by the next class meeting. The student who received a "✓+" had demonstrated a good understanding of the mathematical concepts being applied, and he/she was allowed to take the exam on the scheduled date. The student receiving the "✓-" had to correct noted mistakes and return the corrected exercise before taking the test. Any student receiving the minus not only had to correct the mistakes, but also had to set up a conference with me.

Each conference would consist of examining the student's homework and discussing mistakes and methods of correcting those mistakes, discussing study skills and test-taking skills, and quizzing the student on a new "concept problem." At the end of this conference, the student would either be allowed to take the exam with the class or be given remediation work and a new test date would be scheduled.

This semester I am giving my students selected problems I have chosen to use as examples in my daily lecture. The students already have the "math" in hand and are now able to take notes in the half of the page provided. They can write concepts, procedures, and alternate methods on this single page, divided double-entry style. I am hoping this will encourage them to think about how they take notes in a math class and realize I am not just teaching numbers and variables. I am teaching students how to process information.

This same process can be encouraged by simple, occasional writing tasks such as these:

1. Describe your last encounter with story or word problems.
2. Using your everyday experiences with numbers (finances, mileage, recipes, job, etc.), write a word problem that describes your experience.
3. Work a problem on the right side of the page; on the left, describe step-by-step what you're doing. Include definitions of mathematical terms you use.
4. Given a set of word problems, rearrange into separate categories of your choice. Give a description and rationale for the category.
5. Now that we have finished chapters 1-3, take a look at the processes we have used. Write an essay that explains the similarities and differences in the processes we learned.

Rita: These kinds of written responses put math learning into a student's native tongue. As researcher Marsha Hurwitz comments in "Student-Authored Manuals as Semester Projects" (*Mathematics Teacher*, December, 1990), writing restores meaning to symbols:

> Much of the elegance of mathematics lies in symbolism that allows us to manipulate complex ideas. However, without comprehension of the substances behind the symbolism, the memorization of symbols is meaningless.

Rita Recktenwald, *Associate Professor, English*

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Letting Students "Discover" the Scientific Process

Unfortunately, most science is taught as though it operated in a vacuum. Entering college science students often believe that science operates in a realm apart from their world. Conventional approaches to teaching science at all levels have fostered student expectations that the study of science is beyond their intellectual capacity, that it entails extensive lists of "facts," and that it is foreign to their experience. These approaches promote preconceptions that are inaccurate and serve as major obstacles to teaching any beginning science course. Students become frustrated by the apparent gap between their experience and the scientific world, and this discourages them from becoming active participants in the scientific process.

We became dissatisfied with the traditional approach to teaching the scientific method because it actually reinforces students' errant notions of science. The traditional approach usually involves listing the major steps of the scientific method and providing students with examples of well-controlled experiments. By naming steps in the traditional way, such as "hypothesis formation," students are led to believe that this process is alien to their "normal" way of thinking. Since the scientific method is usually the first subject covered in a science course, students are introduced to a concept which they already believe is beyond their comprehension. This is a frustrating situation for science instructors who know that the scientific way of thinking is nothing more than a systematic means of gaining knowledge. This "scientific" way of thinking comes to us as naturally as walking upright, and everyone uses some form of it daily. Therefore, we have begun teaching scientific method in a way which allows students to experience the process before they put names to the steps in the process. We believe it demonstrates that there is nothing unusual or esoteric about the scientific method of problem solving.

On the first day of our Biology 101 class, students are divided into groups of three to five and are given a short description of the extensive extinction of species that occurred in the late Cretaceous Period. In this description students are told what species disappeared, which species remained, and that these extinctions occurred in a short geological time span. They are reassured that they need no prior knowledge of this event and that, in fact, it may hinder their objectivity in completing the assignment. Attached to the description is a list of 10 possible explanations for these extinctions. The groups decide which three explanations they find most compelling and describe what type of evidence they would need to either support or reject each explanation they have chosen. For example, if the group chose the explanation "Volcanic eruptions released ash into the atmosphere causing the temperature to drop," they might state that they would require evidence of (1) volcanic eruptions during this period, (2) volcanic ash influencing worldwide temperature, and (3) the effects of temperature changes on the species which perished during this period. After compiling their lists, the small groups report to the class-at-large, and more extensive lists of evidence to support or reject explanations are then developed by the entire class.

Students then receive a second sheet which contains a list of actual data which may be relevant to this extinction. The groups then categorize each piece of evidence on the list as either "not applicable," "supports," or "rejects" for each of the three explanations originally chosen. In the volcanic eruption example, groups may find that evidence from the list, such as "Geological record shows a slight gradual cooling of the earth," may support that explanation, while "Volcanic gases released with ash usually cause atmospheric warming" may cause them to reject this explanation, and "Mammals ate dinosaur eggs" is not applicable to this particular explanation. Small groups will then report conclusions to the entire class.

This activity shows students three things about the use of data to solve scientific questions:

1. The process is not foreign and, in fact, is similar to the way they may routinely solve other problems (i.e., deciding where to go to school, which car to buy).
2. Although there may be substantial data that support an explanation, it is impossible to be absolutely certain that this is indeed the "real/true" explanation. Information unavailable to the students now (and, in fact, to the scientific community in this particular case) may ultimately shatter the validity of

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any explanation. This indeterminate approach to knowledge is and always has been the hallmark of good science. In other words, we may need to alter or even reject outright our most favored treatise in the face of new data.

3. The only thing you know for sure is an explanation that can be clearly rejected by the evidence.

This learning strategy demonstrates to students that they have the same ability to use data for problem solving as does a scientist. They begin to see science as a process that they already can and do use everyday. Having experienced this process, it is much easier for students to comprehend the textbook descriptions of scientific method. The description of extinctions are "scientific observations," the possible explanations for the extinctions are "hypotheses," and the process using the provided data to sequentially reject or support explanations is "theory development."

Students generally expect that scientists already have most of the answers. This was exemplified by a student who, after patiently going through this exercise, said, "So what's the *real* answer?" Once the students understand that no one really knows answers with certainty, they are better able to recognize that science is not simply an assemblage of facts but rather a process. They also see that scientific knowledge is dynamic rather than stagnant, ephemeral rather than permanent. We remind students that this process is ongoing for all subjects we will cover during the term.

We have found that this process has the added benefit of shattering students' first-day expectations of how science is learned. They enjoy the opportunity to participate in solving an unfamiliar problem with people they have just met. They soon realize that the sum of their ideas as a group is better than the best idea of any of them alone. This is reinforced by the large group activities where the small groups are sharing their ideas and sets the stage for an active, cooperative learning environment. We have found that many students who had once viewed the study of science as an exercise in the memorization of large quantities of obtuse factual material, now see science as a vital and exciting process.

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Student as Teacher

After several years of teaching lecture-type speech communications classes, it occurred to me that I was teaching communications without allowing my students to communicate. If I lectured the entire time, would my students have enough time to practice the new skills they were learning? I devised a plan to have students attend sessions more prepared and more enthusiastic.

In preparing this new teaching strategy, I needed to find a way to keep the students involved with their readings and class discussion. I asked the students to provide some background information about themselves on 3 x 5 index cards. These cards enabled me to learn more about my audience and also served as a deck of cards for randomly selecting the class lecturer—a strategy that further motivated students to read the assignment before class in order to be prepared to teach.

Each day, a card is selected, and the student so identified leads the class discussion on the assigned readings. To provide some support for the lecture, I write several questions in the margins of my book and give it to the student. The student follows my notes in the margins and poses the questions to the class; the class works as a team to understand the chapter's concepts, achieved through defining concepts and terms, and to apply them to real-life situations. This teamwork plan reduces the nervousness students often feel when asking questions in class. Also, I stand next to the student as he/she is teaching, reducing the student's tension and creating somewhat of a team-teaching situation. If the student "teacher" does not understand a concept, I am available to provide assistance.

The student's responsibility as the "teacher" includes reading and understanding the chapters, leading and maintaining class discussion, encouraging the entire class to participate, and maintaining discipline. Each student has a unique teaching style; a "boring" class discussion is a rare occurrence in my class!

This teaching strategy promotes class discussion and enthusiasm. It is a productive teaching method in communications classes and is applicable to many disciplines.

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Instructional Strategies for Building Student Self-Esteem

The Yuba College Correctional Academy is a partnership between Yuba College, Woodland Campus, and the Yolo County Sheriff's Department. It enrolls pre-service students, as well as correctional officers and deputy sheriffs serving in various law enforcement agencies within the college's service area. The instructional program has been designed to accurately reflect the challenges and demands of "real world" law enforcement; to promote student academic success; and to instill and develop a sense of pride and self-confidence in each student. Instructors implement a number of instructional strategies that promote self-discipline and increase self-confidence—in short, build student self-esteem. Some of the most successful strategies are described here.

- Academy classes are designed to be intensive eight-hour work days and are scheduled Monday through Friday. Daily attendance is required, and students are to be in their seats and ready to begin class each day promptly at 7:00 a.m.
- On the first day of class, each student (1) receives a hospitality pack that includes a map of the county; a list of places of interest, restaurants, and businesses; a current events calendar from the chamber of commerce; and a variety of community and college activities of special interest for students; (2) receives a thorough orientation to Yuba College and the academy; and (3) meets at least one other student (each student interviews another and introduces him/her to the class).
- Desks are arranged in a "U" design so that each student will have a front row seat; the seating chart changes daily to encourage interaction among *all* students.
- Cooperative learning is encouraged; students have the option of choosing or being assigned to a study group.
- A variety of classroom instructional techniques are implemented to accommodate the wide diversity of learning styles.
- To keep the class oriented to the scheduled curriculum, daily objectives ("students will demonstrate . . .") are written on the board.
- Five major exams are given during the academy's term, and each is preceded by an extensive pre-exam review. Students are invited to evaluate each exam immediately by addressing in writing any irregularities with test questions and/or any subject matter which may not have been discussed or adequately covered during class sessions. The program coordinator reviews these comments and determines if any adjustments to class test scores should be made.
- A classroom suggestion box encourages student input to the program. Because early problem resolution is a major instructional objective, suggestions are presented to the entire class for discussion on the day they are submitted.
- Field trips to an area detention facility and the county's Superior Court for role-playing modules reflect a progressive instructional shift from a content-centered to an application-centered mode.
- Team-building projects, such as planning for graduation activities, encourage sharing of individual student resources to meet common academy goals.
- While uniforms are not required, a dress code for acceptable classroom attire is enforced. Strict adherence to the code by students and instructors promotes the critical sense of professional pride. To promote pride in the academy, quality hats and t-shirts bearing the academy's name and logo are available for purchase.
- The majority of students are representing (and/or being sponsored by) various law enforcement agencies; their badges are displayed collectively in the classroom, providing an important reminder that as students and as professionals they are involved in meeting common, shared goals. The names of the instructors (employed by various agencies) appear on student binder covers; their resumés and business cards are bound and displayed.
- Students are encouraged by the public support of their activities. Awards for individual achievements and honors are built into the program, and many are sponsored and/or financially supported by community groups and businesses. As well, a sizable number of active community volunteers serve the academy in various advisory capacities.

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- Instructors and the program coordinator encourage extensive press coverage of the academy's activities. The newsletter, *Excellence Together*, is published at the conclusion of the training sessions and profiles students, instructors, and special events.
- At the conclusion of each academy, students' grades must be reported to their respective law enforcement agencies. However, academy instructors feel that grades alone do not provide adequate information about the student. Therefore, the program coordinator showcases each student in an individual letter and mails it to his/her department head, highlighting that student's achievements and contributions to the program.
- A formal graduation ceremony is held in Superior Court, with guest speakers, local officials, and members of the press giving the correctional officers a dignified finish to an intense learning experience.

Critical to the academy's success has been the active networking with other correctional academies. Sharing program outlines, promotional brochures, and supplemental materials has resulted in improved course development and student achievement.

Michael Mangiaracina, *Instructor, Law Enforcement*

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Test Preparation From the Student Point of View

At least one week before any major test, I enter a set of study questions into Microtest, a test-generating computer program. These questions are drawn from a test item bank (which I have developed over several semesters) and, therefore, will include some of the same questions that will appear on the actual test. I program the computer to print a "study test" without answers and give it to the students. (I also ask the publishers of our textbooks for copies of their computerized testing programs. Many have test banks and will supply them free of charge to instructors.)

The students then choose their teams for the test (see *Innovation Abstracts*, Volume XII, Number 7, "Why Not Team-Testing?"). The study test *forces* the students to seek out the answers to the test items. Students mark their books, make notes, identify page numbers and book titles, and so on. By test day, the study tests look well-used—*fantastic!* On or before test day, I answer any questions students have about the study test.

On test day, they can't wait to get started. Typically, students are shocked when they see the first actual test and discover that most of the test items are *not* the same as those on the study test! But they quickly realize that they **know the material**, and the teams go to work to formulate their answers.

When the tests are returned, they invariably say things like, "Oh, we misread the question," or, "I told you guys that was the wrong answer; but noooooh, you wouldn't listen to me." A new definition of what it means to be a student begins to take shape.

After one test, a student asked, "You really believe in TQM (total quality management), don't you?" I said, "Sure do. Why do you ask?" "You just gave us an example of it," he said. "You told us at the beginning of the class what you expected us to learn, you told us how we should go about learning it, you gave us study questions to show us how well we should learn it, you gave us this test to see if we had learned it, and then we got instant feedback on how well we did. If that's not TQM, what is it?"

Joy to the world!

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The Course Selection System: An Innovative Tool for Increasing the Success of Entering Students

The Problem

Community and junior colleges currently collect a great deal of information from their incoming students for use in advising and course placement decisions. Information typically collected from new matriculated students includes demographic data, prior academic performance, and scores on assessment tests of basic skills. With the exception of scores on the assessment tests, little if any of the information gathered from incoming students is used systematically in decisions regarding initial course placements. At best, counselors are given a computer-generated profile of student background characteristics and assessment scores. However, the information in the profiles is not linked to students' chances for success in the array of introductory courses offered at the college. Typically, counselors review assessment scores and information about students' academic performance in making recommendations about the courses in which students should enroll.

The approach in place at many community colleges has several shortcomings.

1. Counselors have no empirical evidence about the relationship between student characteristics and success in entry-level courses. Thus, their advice is somewhat subjective and is likely to vary from counselor to counselor.
2. Counselors must rely primarily upon scores on English and math assessment tests and self-reports of prior educational experience in recommending courses. The test scores or the combination of test scores and prior experience usually have not been validated for predicting students' success across the array of entry-level courses.
3. Counselors rarely have adequate time to meet individually with each student to review the comprehensive information that could be used in making course selection recommendations.

The Course Selection System

The Course Selection System overcomes each of the shortcomings listed above. It automatically incorporates multiple criteria into course selection advice. It yields information on the probability of first-time community college students succeeding in specific entry-level classes. Students and their advisors are provided with a computer printout showing in which courses students have a high chance of succeeding.

Information obtained from a survey of students' educational backgrounds, assessment test answers, and aspirations are scanned into a microcomputer. The information is analyzed, using coefficients produced from logistic regression analyses. A printout is produced identifying basic skills placement levels and courses which a student has a high probability of completing with a passing grade. This printout can be easily used and interpreted in individual or group advising sessions.

This Course Selection System yields information that allows counselors to assist students in course planning. The variables that contribute to success in specific courses are provided to counselors for use in advising students on actions they can take to improve their chances for success.

The variables that predict student success varied from course to course. Of the 60 variables examined, the most common predictors were:

- English test score
- Reading test score
- Math test score (or math level)
- High school grade point average (self-reported)
- Interaction of units planned and number of hours employed
- Interaction of highest math class completed and grade in last math class
- Importance of college to the student and to those closest to the student
- Age
- High school attended

Students' chances of successfully completing courses can be improved by following advice based on the Course Selection System. A comparison was made between successful course completion of students who selected courses based on the college's existing advising scheme (assessment scores and counseling) versus the recommendations that would have been given to students using the variables found to be the best predictors of student success in the course. In many cases, if students had followed the advice of the Course Selection System, they would have been placed more accurately in their first semester classes. The gains ranged from 2% in fine arts appreciation classes, to 11% in foreign languages, to 41% for some social science classes, to 47% for introductory economics classes.

Advantages of the Course Selection System

The Course Selection System can enhance the efficiency and validity of the advising process for new students in the following ways:

1. It allows colleges to use more information about students in making course placement recommendations than just performance on tests.
2. It provides counselors with valid information regarding the relationship between students' characteristics and their probability of success in particular courses.
3. It provides counselors with specific information on which factors are associated with success in particular courses. For example, the factors that proved to be the best predictors of grades in accounting classes were the interaction of number of hours worked and units enrolled (the more hours employed, the less likely to pass), math level, and grade received in last math class. Such information could provide counselors with valuable insights in advising students.
4. It provides students with a printout of courses in which they have a high chance of succeeding during their first semester. In addition, students are given a handout entitled "Paths for Success" which identifies important factors related to success in particular courses.
5. It provides information that can be readily used by students and counselors in selecting a wide range of introductory courses including English and math.
6. It heightens a college's awareness about the characteristics of students that may influence success.
7. It provides a systematic way to examine whether the procedures for placing students into classes are biased against any ethnic group.
8. It can increase students' chances of succeeding in their courses during their first term in college. This is very significant in light of the research showing that first semester students are often high-risk students.

Conclusion

A major goal of assessing students is to increase their probability of success by recommending appropriate classes and support services. The unique approach described in this article provides counselors and students with a valuable tool to achieve this objective.

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Elaine Cohen, *Dean, Instruction, Diablo Valley College*

Eve Kelemen-Lohnas, *Director, California Learning Assessment Retention Consortium (LARC)*

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These Are My Goals . . . But Are They My Students' Goals?

As instructors, we have expectations for the outcomes we want students to experience upon completion of the courses we teach. Many of us include learning objectives in the handouts we give to students. These objectives describe what we hope to accomplish as instructors—that is, our goals. The assumption we make is that the students will read these statements, see the inherent wisdom contained in them, and adopt them as their own. The problem is that our students may not adopt these goals as their own. In fact, they may have learning goals that are very different from ours. This has important implications for student learning and for our teaching.

Instructors' Learning Goals

Instructors often want their students to have what is referred to as mastery goals for the courses they teach. Mastery goals involve understanding the material, being able to use it, relating the material to other knowledge, using it to reorganize a portion of their current knowledge along a new dimension, and so on. Mastery goals relate to a particular type of motivational orientation, called a mastery orientation. This orientation is most typically found in experts, or in novices who want to become more expert in an area. This motivational orientation is part of the reason we can get so excited about our areas of specialization, particularly when we come across a new finding or a new level of understanding about a subtopic. It is also why we enjoy going to professional meetings or conferences where we can talk to other specialists in our field who share our excitement and orientation. Now let's look at goals from a student's perspective.

Students' Learning Goals

Students may also have mastery goals and a mastery motivational orientation for courses they are taking. This orientation often results in intentions to develop a higher level of expertise in the area. However, it is unlikely that they have this orientation for all, or even most, of the courses they are taking. We know from numerous studies of experts and novices that it takes a lot of time and effort to become an expert. We also know that most people demonstrate expertise in a small number of clearly defined domains. It is unlikely that students could maintain this level of effort and commitment in each course given their other academic, personal, social, and perhaps occupational demands. In addition, most students are not interested in every course to the same degree as they are in every other course. Think back to your own college days. Can you honestly say that you enjoyed every course you took? Did you put in as much effort in each course? Did you see the same relevance in each course for your future life goals?

Our students face the same problems that we did. Some students, particularly in introductory level courses, often have what are called performance goals for many of the courses they are taking. Rather than being primarily concerned with mastering the material, they are concerned about getting a passing grade and avoiding failure. This does not mean they do not have some mastery orientation as well, only that their dominant wish is to perform adequately (however they define that) in the course.

I have taught an introductory statistics course at The University of Texas for a number of years. When I walk in the first day, I usually find a sea of faces turned in my direction, with expressions that range from apathy to hate, with a few smiles thrown in. I love statistics and think it is a crucially important and fascinating content area . . . how many of my students do you think share my feelings or motivational orientation? Very few. Most of the students in the class are not there because they want to become statisticians. They are there because taking statistics is required for a number of different majors at The University of Texas, including: nursing, educational administration, allied health professions, and social work. It would be unrealistic for me to assume that even a sizable minority of my students have a mastery orientation (and this has been confirmed in a study where measures of both mastery and performance motivational orientations were given to the students in this course). What then are we to do as faculty to cope with this problem? How can we help students to adopt at least some level of mastery goals for our course?

Instructional Implications

The first implication from work in the area of academic goals is that both teachers and students must be aware of

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their goals before they can analyze and use them to help guide their thoughts and behaviors. Many students come into a course without a clear idea of why they are there or how the course content might relate to present or future plans. Particularly in entry level or general education courses many students have not thought past the fact that the course is required for transfer credits, graduation, or certification. It is important for each instructor to set aside some time at the beginning of the course to talk about goals.

This can be done in a number of ways. One popular method is to have a class discussion where students brainstorm how the content area being covered could be of interest to them now or in the future in their academic, personal, social, or occupational life. Often students are surprised to discover that what they are learning can impact their lives in many different ways. For example, in my statistics course, many students do not realize the number of everyday statistics that bombard them, whether it be the probability that it will rain tomorrow or the 9 out of 10 doctors that recommend Brand Q. Using the discussions we have at the beginning of the semester gives me ideas for things I use to help make some of the statistics we describe later have more meaning for them. I still cover the conceptual material I want to present, but now many of my students have more reasons for wanting to learn it than simply getting a better grade.

Another method for helping students to develop a more balanced motivational orientation is to use five-minute papers. Five-minute papers are short notes, or letters, that students periodically write in class or as homework. The content of the notes is a brief discussion of how the content material in the current sections of the course can help the student reach his/her personal, social, academic, or occupational goals now or in the future. This is a way to maintain an ongoing dialogue about the importance of the topics covered in the class for each student. Again, for students to use goals, they must be aware of them.

A third method for enhancing student motivation is to relate the content material to different career types. For example, many students are shocked to find out how much writing is done by engineers or nurses as part of their normal workday.

A fourth method is to help students brainstorm about their own futures. Many students, particularly those in the 18-24 age range, have not given much thought to their future goals. Becoming clearer about what we want out of life helps us to relate our goals to our present behavior.

Finally, instructors need to spend time modeling the excitement and ways of thinking about their content areas. Sharing with our students our own excitement and helping them to think in ways that are appropriate to our fields helps students in two different ways. First, it helps them to understand what it is that draws us to our chosen areas. Second, it helps them decide if this is an area they might want to pursue.

Each of us has stories of instructors who excited us about an area. For many of us, these areas became more interesting to us and perhaps became our own majors and professions. I can remember a history class I took in college. I hated the prospect of the long reading list and tedious hours of studying. One day the instructor pointed out the differences between reading a history book, such as the book we were reading at the time on the Great Depression, and reading a book in other areas. I was a science major and was reading for the details but not the feelings and emotions of the people involved. I did not understand how to find the main ideas in a history book or how to think about what I was studying. He did not make me a history major but he did start a lifelong love of history. My motivation still had a heavy performance orientation, but now it had a mastery orientation component as well.

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Suanne D. Roueche, Editor

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Role-Playing a Computer

Students in my beginning programming courses, computer literacy courses, and program design courses often have a difficult time grasping how a computer operates. To my students, the computer remains a mysterious box from which, when a sequence of keys is struck in the proper order, offers wonderful and unexplainable results. To contradict the assumption that the computer remains in complete control, I have used role-playing as a teaching tool.

Many of the fundamental concepts of how a computer operates can be illustrated in just one short role-playing session. This semester I used the following programming example (from BASIC programming) in my Introduction to Computer Information Systems class (which serves as both a computer literacy course and an introduction to computer science course). This sample program allows the novice student to see good programming style employed in a short, simple program.

* * *

Using one student as a constant memory location and four students as variable memory locations distinguishes between the two types of locations. The constant memory location has just one thing to remember, regardless of the number of times we "run" the program. The variable memory locations also remember just one item of information, but the distinguishing characteristic remains that their piece of information changes every time we run the program. This gives me the opportunity to discuss the nondestructive read/destructive write characteristics that they have been reading about in the text.

The student playing the control unit must be very conscientious throughout the entire process. The interpreter for this program must go line-by-line through the program. The control unit's delight over encountering the REM statements or comment statements and not having to act is obvious. The communication between the control unit and the remaining parts of the computer is fun to watch. The user tells the input device to have the control unit retrieve our program from the secondary storage device ("limitless" memory). Then the control unit uses its primary storage capacity (stored program concept) and displays the program on the output device. All the while the interpreter is talking to the control unit. When the user states his/her name, the input device tells the control unit the name. The control unit promptly assigns the name to a variable memory location, and we proceed with the program. When we get ready for the computation, the control unit must retrieve from memory the needed information, giving the content to the arithmetic/logic unit, and then store the results that it receives. Then it must tell the output device the results of the computations. We do each line of the program with all the corresponding parts of the computer being accessed. Once we have run the program, I recruit a new user; and we rerun the program, discussing what happens to the previous values in the variable memory locations and how "dumb" the computer is—since we have to tell it exactly what to do.

If things get a little rowdy or loud during the role-playing, then I jump in with a short explanation of how circuits are densely packed on a chip and a little "crosstalk" should be expected by any experienced user. I point out that when results do not turn out the way they expect that they might want to do some "deskchecking" to see if the program logic is correct, or they might just want to rerun the program to see if the same thing happens again.

* * *

This exercise seems to get more of the class involved and makes some of the abstract topics more relevant. When the terms appear on a test, the students deal with them in a much more positive way. And, it makes the people in the hallway wonder what's going on and how students could be having fun in a computer classroom.

Charles Babb, *Instructor, Computer Science*

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Poetry Across the Curriculum—An Approach to Critical Thinking

Each semester as their poetry unit approaches, English instructors invite me to their classes to read and discuss my poetry. This practice, which began in an effort to combat students' dread of studying poetry, has become a tradition.

I compiled a booklet that included poems that had both contemporary appeal and universal scope and a discussion of figurative language, sound patterns, meter, suggestions for writing poems, an explication of a poem, and a glossary of terms. Questions were designed to encourage students to think about feelings and language. These booklets were printed and placed in the campus bookstore where students could purchase them for a nominal fee and bring them to class the day of the program.

When I read the poems aloud, poetry comes to life for the students. They are actually hearing the sound patterns and rhythms of poetry in its original form—a song or recitation. After I read and discuss each poem, we have an open discussion, during which time the students talk about the meaning of the poem. At this phase of the lesson, I do not call on individual students, but rather I let them respond to questions as a class or recall experiences at will. Often the instructor will relate aspects of my poetry to lessons previously covered in class.

This summer, in one of the classes, the instructor suggested that I include a writing assignment. After concluding my usual program, I gave the students an assignment sheet instructing them to re-read three or four of my poems and to select the theme of one of them with which to create their own poem. The results far exceeded any expectations. Many of the students completed the assignment in about 15 or 20 minutes, several of them read the poems to the class, and we were delighted with their quality. The students who had not finished writing by the end of the class period were allowed to complete the assignment at home. Later, I entered all of the poems in the computer and made a booklet. Students were elated to see their names in print. About half of the class had never attempted to write poetry.

As a spin-off, I went to this same instructor's creative writing class. Some of my poems are based on the painting of a local artist, so we had a lively discussion about his art. Following my presentation to the class, the college art students held an exhibit of their works. The creative writing instructor had her students view the art, write a haiku or a five-line poem about any painting, then read the poems to the class. Both the speech and art instructors were present for the readings, and students then gave the poems to the respective artists.

As news of my poetry reading has spread to the reading instructors, I have been invited to their classrooms to illustrate reading comprehension through poetry. As a result of a staff development workshop on critical thinking, one of the psychology instructors and I have discussed the possibility of presenting a similar program in her class, stressing the psychological dimension of the poems.

What began as a program to help students understand and appreciate poetry further developed into fostering critical thinking and transcending curriculum boundaries. This program is easily implemented and invaluable for improving faculty communication and for showing students that all disciplines are interrelated.

Elaine McDermott, *Instructor, Learning Lab*

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Suanne D. Roueche, Editor

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Oedipus Wrecks

Once a semester my institutionally generic classroom is transformed. Desks are pushed back and tables arranged. Carefully, with only a few self-conscious giggles, the jurors file in. Four young attorneys follow, proceeding to their places with cards and legal pads in hand. Then, the judge enters the courtroom, takes her place, and solemnly intones the words which begin the closing arguments in the case of the *State v. Oedipus Rex*.

Whether born of desperation to combat the end of the semester slump or a rational stretch to become more interdisciplinary, the trial of Oedipus has become one of the most delightful and productive assignments in my Composition II class. End-of-term evaluations reveal it is equally popular with students.

The assignment is eminently doable and enhances current classroom practice.

1. **Teach the play as you normally would.** I begin with the usual introduction to Greek drama, especially the tragedy. The historical social context of the play, the cast of characters (especially the role of the chorus), and the play's organization all merit discussion. Traditional approaches to the play from the Freudian to the old fate/free will controversy engender some lively discussion, but keep it tantalizing rather than exhaustively thorough.
2. **Discuss.** Once students begin to discuss the play, *The Moebius* strip nature of some of the issues engages them. Then as frustration begins, I ask what our society has devised to resolve intricate moral issues of guile and blame. Inevitably, someone suggests the legal system as a place to resolve knotty questions.
3. **Relate and review.** The introduction of the legal system allows for the review of the class's previous knowledge of courtrooms, occasionally with surprising candor. Much of the students' information, however, comes from the media. Media literacy is a natural unforced topic at this point, and I manage to work in a review of the recent films with legal issues. Sooner or later Glenn Close's outfit in *Jagged Edge* is mentioned, and the segue becomes the dance since performance has joined in.
4. **The trial preparation begins.** From performance and the law, it is only a short hop to the assignment of the trial. Volunteers offer to appear as attorneys and the jury foreman. The rest of the class serves as the jury. I am the audience.
5. **The expert visits.** To acclimate students to the real world of a trial, I impose on a colleague who is both attorney and actress. Taking a break from her duties in the paralegal program, she visits the class. She reviews the process of the trial from indictment to actual events in the courtroom. Her discussion of the complementary roles of prosecution and defense—the state's burden and the defense's rights—remind both attorneys and jurors of the responsibilities each side bears. In addition, her theatrical experience furnishes her with credibility to cover elements of presentation style. Should you not have access to such a Renaissance person in your hallway, do not despair. Paralegal programs on campus or college staffs can often provide names of willing or imposable attorneys. And, after all, the elements of organization for the closing arguments closely reflect the pattern long taught in persuasive writing.
6. **On the day of the trial, enjoy.** The class only does the closing arguments of the trial process. Anything that happens in the play is permissible as evidence. The testimony of the shepherd, Teiresias, and Jocasta is alluded to in court, and interesting legal questions arise in considerations of the admissibility of the dead queen's evidence. Fortunately, my colleague returns as judge and rules efficiently and without fear of appellate court review.
7. **Trial day is a day of surprises.** I have never failed to be amazed at the variety of students who volunteer. From the best to the worst, from the most gregarious to the most inhibited, students of all sorts rise to the task—and the bait. They will substitute live performance for written essay. Their performances are likewise amazing. Shy quiet students become aggressive and eloquent in Oedipus's defense. Students who misplace texts and forget due dates enter the class with notes and quotes organized for the most effective prosecution of this unnatural criminal. Lawyers who all semester have worn jeans and shorts appear in navy blue and pearls or dark

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coat and tie, grasping the importance of costuming to modern as well as early Greek audiences. Even jurors dress for the occasion and listen most attentively to their classmates.

8. **Observe the jury deliberations.** After the attorneys have presented their cases and the judge has given the jury its instructions, stand back and be surprised again. Jurors, whose greatest attention was previously given to the clock, often repeat attorneys' arguments nearly verbatim and argue cogently for the merits of their views. The jury foreman earns his stripes leading the discussion and handling the votes. Verdicts have varied wildly. Recently, students in one section voted to acquit Oedipus of incest (the issue of intent) and convicted him summarily of murder, while in another class he was found not guilty of incest, but a mistrial was declared on the charge of murder.
9. **Expect the unusual.** One student, on the day of the attorney's visit to begin trial preparation, asked if the attorney were related to a traffic court judge of the same name. Her affirmative reply seemed to unnerve him a bit. Later in class, he brought the house down by asking if he should apologize to her for his traffic ticket lest he jeopardize his client's case. One student, a poised and polished young woman, came to class late the day of the big case. Asking sheepishly to see me before the trial began, she confessed to being so alarmed at the prospect of her debut as prosecution that she was unable to keep her Cheerios down. With encouragement and assurances that her hasty exit, if necessary, would not prejudice her case or her grade, she proceeded to deliver a fine and compelling summation. Henceforth, all novice attorneys will be known as *Oedipus Wrecks*, but I have not lost one yet.

Delia Palermo, *Associate Professor, English*

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Using the Opaque Projector in Composition Classes

How I stumbled across the opaque projector in the dark recesses of the library has escaped me, but I knew immediately that this antiquated "monster" would be a valuable teaching aid in English composition. I could put the students' work up on the screen the day the assignment was due and did not have the expense of making transparencies, nor need lead time to accomplish this task before using the students' essays in class.

With the opaque, I displayed each student's essay on the screen, and we critiqued the essays together. At first the students were hesitant to make negative comments; however, with no names showing on the essays and with some prodding from me, they soon saw the value of this method. I was amazed at how well the students could discern problem areas and equally amazed at how well they thought of strategies to make the piece of writing more effective. One of the reasons this method worked so well was that we were using "real" students' works, students who were sitting in the classroom.

Now, 10 years later, I continue to use the opaque projector to teach composition. We have purchased six opaques for our English faculty and have conducted inservice workshops on using the opaque in teaching composition. I understand that some faculty will never feel comfortable with the process, just as some students will never feel comfortable with their work being critiqued by an audience of their peers. Therefore, I will never dictate that faculty use the opaque, just as I will never force students who have a serious problem with the process to participate.

This method of critiquing essays allows instructors to give immediate feedback on a student's writing, and it reduces the workload as they no longer have to spend as much in-office time commenting on individual papers. It allows the students to participate in the analysis of many pieces of writing during the semester, helping them develop their critical thinking skills while expanding their "writer's toolbox" of effective writing strategies.

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Measuring Student and Institutional Effectiveness: A Vocational Education Perspective

In this era of fiscal austerity, the demand for information regarding institutional outcomes is increasing. Measures of institutional effectiveness and quality are gradually shifting from institutional attributes such as faculty credentials, enrollment figures, teacher-to-student ratios, quality of facilities, number of books in the library, etc., to measures of economic outcomes and individual "consumer" benefits. The increased vocationalizing of higher education and the adoption of "marketing" orientation (coupled with rising costs of education to the consumer) have contributed to this shift.

A number of technical, vocational, and community colleges are now assessing institutional outcomes based on quantifiable attributes, such as the number of students who find jobs after graduation, the number of students who find training-related employment, the number of students off public assistance after graduation, the increase in students' earning power, and the program transfer effectiveness. In addition to these quantitative indicators, other qualitative indicators that are receiving increased attention are the extent to which students use their education to improve their quality of life and personal development after college.

Alberta Vocational College (AVC) Lac La Biche conducts three surveys to measure student and institution effectiveness: (a) point-of-entry, (b) point-of-leaving, and (c) follow-up.

Point-of-Entry (POE) Survey

The first study surveys entering students on the premise that the first step in assessing institutional outcomes is to examine the mission and mandate of the college. With this caveat in mind, the point-of-entry survey assesses whether the college is meeting its mandate of providing educational opportunities and enhancing educational access and participation for its target population.

A self-completion questionnaire is administered in the first week of September. The survey provides a beginning student database to assess and evaluate a variety of issues related to the college mission and mandate:

- Demographics: age, sex, marital status, and other background information;
- Employment status prior to coming to AVC;
- Sources of information about AVC;
- Sources of financial aid;
- Program of study;
- Residence while attending AVC;
- Factors affecting a student's decision to attend AVC Lac La Biche;
- What students like and dislike about the college.

Point-of-Leaving (POL) Survey

While the point-of-entry survey is designed to collect information on student background, the point-of-leaving survey is tailored to examine college experience of prospective graduates.

As the name suggests, this survey is carried out annually two weeks before the end of each full-time program. The survey is administered in class to all graduating students by the Department of Planning, Research, and Development. It examines whether students achieved their academic goals at the college, by soliciting students' perceptions of their training, employment prospects, and future educational plans.

Objectives of this survey are:

- To provide information about the perceptions and problems of students before they graduate;
- To assess how well students are prepared to meet the challenges of the employment marketplace;
- To better understand the type of image the graduates of AVC take with them to the labour market;
- To obtain a comparative analysis of students' perception of their training before and after graduation;
- To understand the perceived job information needs of students;
- To collect basic information necessary for future student follow-up studies;
- To gather information on student's perception of their instructors.

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Follow-up Surveys

Follow-up surveys assess the impact of college attendance on students. This first follow-up survey is conducted three months after graduation. This is central to the mission of most vocational college programs, since timely/rapid job placement is an overriding concern of all vocational training programs. Rapidly shifting economic conditions and the need for institutional response to a changing labour market dictate that feedback for program modification occurs more frequently than the routine annual follow-ups prevalent in many evaluation system models. The short duration of most vocational training programs and the value placed on immediate employment by sponsors of such programs make a three-month follow-up of AVC graduates a *sine qua non* of AVC program evaluation procedures.

Each fall, the Office of Institutional Planning, Research, and Development sends a questionnaire with a stamped return envelope to individuals who graduated from the college in the spring of each year. Respondents also are contacted by telephone in an effort to maximize the number of responses. In addition to the three-month follow-up survey, a one-year follow-up survey of graduates is conducted to further explore labour market experiences, continuing education pursuits, satisfaction with college services, and relatedness of training to employment, earnings, etc.

Objectives of this survey are:

1. To gather data on graduates' employment-related experiences three months after graduation;
2. To explore how AVC graduates are able to apply their training to the demands of the job market;
3. To provide data on graduates' perception of their training at AVC;
4. To provide comparative detailed information on the labour market experiences of graduates by program;
5. To find out whether graduates are better off, worse off, or the same economically after graduation;
6. To identify the employers of AVC graduates;
7. To identify the location of employment of graduates;
8. To document further educational activities of AVC students.

Conclusion

These surveys provide a balance between quantitative and qualitative assessment of institutional effectiveness.

1. POE results provide information useful toward the development of an institutional marketing plan program, specific marketing strategies, and enrollment projections.
2. POE allows an institution to monitor the impact of college on students by surveying students upon arrival and after graduation.
3. POL results enable an institution to access its mission and mandate focusing on the extent to which institutional or program goals have been met from the student's perspective.
4. Follow-up surveys provide a verification of changes in economic circumstances of graduates and value-added effects of training and education. The triangulation model allows the college to determine whether graduates are better off, worse off, or unchanged as a result of their training.
5. Follow-up surveys provide a validation for relevance of training to employment situation—e.g., strength of relationship of training to employment.

These surveys provide important data for documenting the operational effectiveness of vocation programs and are significant components in recurrent re-evaluation of program and institutional effectiveness.

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Suanne D. Roueche, Editor

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Collaborative Writing: English and Math

Students often take courses without ever recognizing how they may be related. They may move from English to math courses, for example, and never see connections between the two. Instructors, too, for a variety of reasons, may fail to make these connections for themselves or for their students. Math instructors may feel as uncomfortable with writing as English teachers may feel with statistics.

We, a math instructor and an English instructor, prior to our collaboration, had exchanged pleasantries between classes, but never engaged in conversation. However, last fall we heard an interesting account of an unintended collaborative teaching situation. A student sought the advice of her statistics teacher from the previous semester after listening to her report writing instructor (in the English department) describe a term project which required, in part, collecting and analyzing statistical data. The student, surprised at the writing requirement, asked how one could set up the questionnaire in order to analyze the results and present them graphically. English and statistics seemed like an unlikely mix, she felt. The statistics teacher was not familiar with the requirements for the English course, but became acutely interested since her department had recently instituted a similar mandatory paper for her class. Thus, urged by this student's questions, we sought each other out to discuss how to help students enrolled concurrently in these courses, and we devised this collaborative strategy.

The Collaboration

We assigned reports for our students that required a collaborative English/statistics effort. We both explained the tools to be used for the project and discussed the types of surveys, and the students developed a hypothesis which could be used for both classes. Statistics placed heavy emphasis on learning sampling techniques and designing the questions to facilitate numerical analysis. English emphasized designing the survey format and the use of tone, grammatical structure, and readability. When the students' surveys were completed and the data tallied, each question was analyzed using appropriate statistical tools.

The Results

This collaborative approach improved the quality of the reports significantly. The six students enrolled concurrently in the two classes offered their assistance to the other students more readily than did the students who were not enrolled in both. Statistics students who were in the English class helped their peers analyze and graph data, and English students who were in the statistics course helped their fellow students design their report and create the survey questions. As a result, students produced reports that were written and analyzed with greater detail and precision.

As well, when students were asked to critique another student's report on the English final exam, more were able to comment effectively about writing style *and* statistical analysis. Statistics students pointed out that they had developed an increased ability to recognize a well-written report, as well as appropriate graphs and valid statistical analysis.

Although we conceived the collaboration as a means of producing better papers, we discovered additional benefits: Students became more aware of how disciplines can be related, and instructors from different disciplines learned to collaborate.

Conclusions

Admittedly, we each still feel more at home in our respective fields, but we have gained insight into the other's area of expertise. We plan to include the computer instructor and the computer lab in next semester's project. The more proof we provide that one discipline supports another, the more relevant each becomes.

Barbara Murray, *Instructor, English*

Jennifer Walsh, *Instructor, Mathematics*

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Community College Leadership Program, Department of Educational Administration
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Law & Security Simulations: Integrating Theory and Practice

Simulations test student skills and allow them to apply their working knowledge and instinctive reactions to seemingly real situations. For instance, demonstrating to a student how to handcuff a prisoner and listing the reasons for maintaining control of the subject will never have the same impact as a prisoner escaping from a student during a simulation exercise.

The primary task for instructors in the Law & Security Program is to set up teaching conditions that are as close to real life as possible—e.g., roadways on college property are blocked off for accident scenes; the campus pub, college plant, conference dining room, storage rooms, and any other useful areas are borrowed for crime settings.

The law enforcement community gets involved. Volunteers from the Royal Canadian Mounted Police, Ontario Provincial Police, the Canadian Pacific Police, and the Thunder Bay Police Department each offer in writing no more than four different situations (actual experiences of these officers) and oversee their own simulations. Actors from high school drama clubs assist in making the simulations come alive; makeup is applied by professionals to enhance the reality of the scene. College professors who are involved in the L&S Program by teaching photography, crisis intervention, psychology, forensic science, and sociology give freely of their time to analyze the students' responses to these situations.

Following the simulation exercises, the students prepare for court. They arrive in the courtroom setting, appropriately dressed and ready to present their evidence—reports, articles gathered at the scene, testimony, photographs and/or slides, court briefs, motor vehicle reports, and planned drawings.

Everything the students have been learning comes together. They build their confidence that they have the intuition, reflexes, maturity, and leadership qualities to walk into difficult situations and handle them well. The simulations afford the students a realistic look at their chosen careers. Some come to the realization that this line of work is not for them—for example, one former student assumed everyone in the house was dead and turned to face a gun and an actor who shot him with blanks.

Faculty meet in the evening, on their own time, to plan events. The quality of the L&S program is upgraded through the social and intellectual contact with the policing agencies in the community. The involvement between educators and police departments builds trust and credibility for the program. Moreover, the agencies are afforded opportunities to interact with and observe the students as potential employees.

Direct contact with potential employers (agencies) heightens students' desires to perform well during simulations and in the classroom. It is not enough to pass along information and expect students to grasp its significance. Application of theory must be presented in a meaningful way.

Colleen M. Clarke, *Professor, Law & Security Administration Program*

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Suanne D. Roueche, Editor

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Between Scylla and Charybdis

Student retention and the emphasis placed on it by my new employer was giving me the jitters. I had recently been hired at the community college, and, although I had taught for several years, both at my alma mater, and elsewhere, none of those institutions had even hinted at trying to retain students. They had all, of course, exhorted me to uphold high standards, and, to the best of my knowledge, I had. It was not unusual to see several students "drop" after the first exam.

I had never given any thought to the "dropouts," let alone worry about "retaining" them. In my experience, after one tough exam, the "weak" got going. I was left with strong, well-motivated students, and things worked out. I was a strong believer in making the students think and apply what was taught, rather than simply recognize sentences from the textbook. This method ensured learning, but, also ensured a high dropout rate.

How could I stop the exodus? I could, of course, have made the exams easier. I could have dropped their lowest grade or curved their exams. I could have discarded some questions which the majority thought were tricky, but that went against my grain. Not that I have never resorted to such practices; but, when I did, it bothered me enough to take away my job satisfaction.

Such strategies are commonly employed, and I learned under several professors who regularly used all or most of the above. However, when I looked back at my own education, I realized that I had retained what had been taught by those teachers who were considered "hard," "tough," or "too demanding." Because of their uncompromising attitude, their students had to buckle down and learn, or drop and run!

Some of my students, and not just those at the community college, had high school diplomas but were unable to write one good short paragraph. They either made gross grammatical errors, spelling mistakes, or compositional errors. Yet some said that I was a hard teacher and that they had made As and Bs throughout high school, or in other courses they had taken. So, I had come to the conclusion that their school system had indeed let them down and given them a false impression of their capabilities. I had no desire to add to that. I could not bury my head in the sand either. This was a community college, and it was the mission of our institution to educate the community. So it was essential to reach out to students and retain them.

* * *

After much thought, I took the only option available to me. I told my students they could take re-exams if they felt they did poorly. I assured them that the tests would cover only the material covered in class. I took the responsibility of covering everything that was essential at the level being offered. The exam would have one compulsory essay question and 50 objective questions. The objective questions were mostly multiple choice; however, the wording was not the same as in the textbook, or as in the transparencies used in class. They were allowed to leave five objective questions blank, without penalty. If they chose to answer them, they would be counted. (I was not about to forgive them their mistakes, only the opportunity to bank on what they knew for sure.)

I repeatedly told my students that if they knew the important points and had understood what was presented in class, I saw no reason why they could not earn a full 100% on my tests.

After I shared the grades on the first exam, I went over the exam in class, explained why the correct answers were correct, and why the incorrect answers were incorrect. I also displayed the best essays on the notice board (with the permission of the authors). I wrote what made me single out those essays as excellent.

While going over the exam, some students would interject as I spoke and say, "But I thought you meant . . . ". I would respond, "Yes, sometimes we do not quite understand the concepts as the conveyor wants us to. That is precisely why I allow re-exams. I give you the opportunity to re-learn the material correctly. Demonstrate to me that you have, and I will gladly give you the A you will then deserve."

Even with this generous offer, very few students ventured to take re-exams. Some students did drop the course. I repeated the procedure after the second exam; and this time to encourage more of the students to try again, I announced that I would set aside one class period

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for re-exams, when those who wished to re-study and try to do better could take a re-exam, and those who did not could instead watch a video on the current topic. I also told my students that the re-exam would be of the same difficulty level as the first, and if per chance they did poorly on the second one, I would keep the better of the two grades. This worked like magic.

With the threat of further failure removed, secure in the knowledge that they would get another chance at doing better with nothing to lose, many students availed themselves of the opportunity. My class, as a whole, did better. They experienced the pride of accomplishment, and I experienced the joy of success.

A few of my students, especially older women, were very keen on making As. They would make high Bs, try again and still make Bs. I patiently went over their exams, pointed out their flaws, and allowed them to try again. The questions were never repeated. They were, of course, very similar. I simply selected another set of questions from the various test banks I have collected over the years. This meant a lot of work. But these students were determined, and they indeed did make As.

One student in particular took a 100-level General Psychology course with me in the fall, and a 200-level Life Span Development course the following spring. Amazingly, in the fall she took every exam over three to four times before she managed to make an A, whereas in the 200-level course, she made As on the very first attempt on most of the exams and did not have to take a single re-exam to earn her A. *She had learned how to learn.*

* * *

I have found that my retention rate has improved tremendously, and, what is more, my students are more relaxed and seem to enjoy my lectures. More important, I feel relaxed and am enjoying teaching more than ever.

Allowing re-exams does mean a little more work (an understatement!), but the results in terms of the quality of education, goodwill among students, and a positive reputation for the teacher and the institution, makes it a strategy second to none. I am looking forward to bringing home the Golden Fleece.

Anila Ragade, *Instructor, Psychology*

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Keeping In Touch With Students

My students are responsible for reporting their every absence during the semester via memorandum. It is a confidential "in-house" communication. The memo can be handwritten in ink or typed with this standard information: TO: (instructor), FROM: (the student), DATE: (day submitted), SUBJECT: (a detailed explanation of the absence).

* * *

This writing assignment further requires that the student: (1) follow the writing format correctly (if format is incorrect or explanation does not clearly *explain*, then the student must rewrite the memo); (2) compose the content—acknowledging and identifying why he/she was not in class and directing the content to the stated audience; (3) submit the memo at the beginning of the first class following the absence; and (4) affix initials to the writing. [The student knows it is read, even though no grade is assigned.]

* * *

The recordkeeping (taking roll every class meeting, recording absences, and reading/recording memos) is well worth the instructor's time: Current events in the students' lives are shared via the written memoranda, events that rarely are communicated to the instructor face-to-face.

Do the memos make a difference in a student's decision to attend the class? I am not sure. But the memos continue to help me know more about my students and what is happening in their world.

Mary B. Funk, *Adjunct Faculty, English*

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An Open Letter of Confession to My Scientific Colleagues

Dear Colleagues,

O.K., I'll admit it. I've avoided discussions with some of my colleagues in the humanities and social sciences about innovative teaching techniques. And yes, like some of you, I have felt some guilt about not employing the most recent, hot instructional techniques like collaborative learning. And I'll admit that I've wondered what the heck issues such as "cultural diversity," "political correctness," and "critical thinking" have to do with me and my "pure discipline" of science. In my guilty confusion, I've retreated to the sanctity of my discipline in the firm belief that the laws of gravity do not discriminate on the basis of age, sex, race, physical ability, national origin, or lifestyle. I'm firm in my belief that DNA is always politically correct and that the application of gas laws is the essence of critical thinking. As a faculty member trained in the methods of science, I have found comfort in knowing that, indeed, my discipline is exempt from these issues and that I need not worry about them in the comfortable surroundings of my science laboratory.

One day, in a moment of weakness, no doubt, I allowed guilt to creep into my thinking about teaching methodologies. I had a momentary bit of insight I thought might be worthy enough to share with those of you who might have had similar feelings of inadequacy. Science is not exempt from the discussion, nor are we in science behind the curve on these issues. On the contrary, science has always been on the cutting edge of pedagogy! For a moment, let me share with you some of the examples of applications I've used for years in the life sciences that address these matters. My biggest problem was not recognizing the inherent innovative value in methods which I'd been using all along.

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Innovative Teaching Methods. We in science call collaborative learning experiences "laboratories"—you know, the things that happen in often smelly places late in the afternoon after all the rest of the folks have left campus for the day. I ask you, what is more collaborative than a pair of lab partners quizzing each other over body parts and using discovery methods when their teacher is not immediately available to answer a question? Collaboration and the scientific method are two of the most powerful tools that we in science have always used. And what better example of writing across the curriculum can you find than a student struggling to make a laboratory report comprehensible.

Gender. Gender is a basic teaching tool in the life sciences. Beyond the mere differences in plumbing, there are a host of issues that address the question of differences and similarities between the sexes. Basic genetic issues such as sex-linked and sex-influenced inheritance patterns are perhaps the most obvious examples. But we also address these issues when comparing behavioral adaptations among species, skeletal differences, hormonal influence on fat distribution in males and females.

Of course, one should never overlook the opportunity to highlight the scientific achievements of women such as Rosalind Franklin and her important contributions to the description of the structure of DNA. Nor should we ignore the achievements of Lavosier, Curie, and Agassiz who have made significant contributions to the world of science, both in their own right and as contributors to the work of their husbands.

Age. Developmental biology is a foundation for us in the biological sciences. The aging process is a continuation of that idea. Wrinkling skin, skeletal degeneration, or sagging body parts do not always captivate the mind of a 20-year-old. But those facts of life clearly sensitize students to the personal issue of aging. Noting that gravity affects anyone who manages to live long enough and that varicose veins are part of the price we pay for being bipedal in a gravitationally unforgiving environment provides us with the opportunity to demonstrate our "interdisciplinary" roots.

Ethnicity. Indeed, gravity is color-blind, but there are good reasons to discuss matters of biological differences in ethnicity. A classical application such as sickle cell trait is a perfect link to concepts such as natural selection and adaptation. Another favorite in anatomy is a discussion of how melanocyte distribution in skin is similar despite definite differences in skin color. But we can also use science to highlight the contributions of scientists of color whenever we present

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the historical evidence leading to our present state of knowledge.

Political Correctness. It is important for students and teachers alike to realize that science is not exempt from the debate over political correctness. Current events are a continuous source of examples of where science and politics collide. One need go no further than the daily newspaper to find examples of the collision of these two forces. Spotted owls, abortion and the right to die, rain forest destruction, and the ecological catastrophes masked in the glow of a "clean" Middle Eastern War all give us pause to think and challenge our ideas about right and wrong. Perhaps no other issue than the debate over evolution vs. creation is so demonstrative of the fact that at least the biological sciences are not exempt from the issue of political correctness.

Critical Thinking. Despite the jargon, critical thinking is simply helping students make informed choices. It is the reason that all of us in education exist, whether we teach a course called critical thinking or something else. Regardless of the confines of my discipline, my job as a teacher is to help students make good decisions about an array of choices they face daily. Science is a perfect forum for developing critical thinking skills, for indeed the scientific method is little more than learning to make choices which are based on evidence gathered through a variety of scientific means.

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Well, I feel better now, having shed my guilt and shared a few of my secrets with those of you who may have had similar doubts about the applicability of current pedagogical issues to your discipline. I hope that you'll be able to throw off those chains of guilt and free yourselves of those nagging doubts about your ability to teach utilizing the most fashionably innovative techniques. I also hope that this letter has been as good for you as it has for me, and that you'll think about your own discipline and perhaps some of the ways you may already be addressing the needs of our increasingly diverse student population. Perhaps these brief musings will spur your thinking in new directions.

Candice Francis, *Associate Professor, Life Sciences*

For further information, contact the author at Palomar College, 1140 West Mission Road, San Marcos, CA 92069-1487.

A Tale of Three Disciplines

Two disciplines, Literature and Desk-Top Publishing, joined to challenge students to create a practical, scholarly class project.

Students in Multicultural American Literature (1) read six monographs by Hispanic, Native American, Vietnamese, Japanese, African-American, and Polish-American writers, and (2) chose six areas for investigation—food, marriage and death, holidays, education, family life, and work. Then each student was assigned an oral history project. Each was to locate and interview someone from another culture (i.e., was born in a different country or had strong ties with a foreign country or foreign culture, etc.). After the interview, each was to complete the oral history, take a black-and-white portrait picture of their interviewee, and submit both a paper copy and a disk formatted for Word Perfect to the Lit instructor.

The Lit instructor, after grading and returning the papers to the students for necessary revisions, submitted the disks to the Desk-Top Publishing instructor so that the students could create a book. The students in DTP decided on layout, font size, etc., and were responsible for acceptable placement of the photograph (or any artwork). [The title page was designed by our public relations coordinator.]

A contest was held in the two classes to title the anthology. Over 75 titles were proposed, and a three-member panel selected the winning title. The winner received a $20 gift certificate to a local restaurant.

The university print shop copied the pages and photographs, and the university library bound the book. We sent the anthology to the Library of Congress to be copyrighted.

This anthology of oral histories was a huge success with both classes. Students understood the relevance of interdisciplinary cooperation. Their interviewing, writing, editing, and critical thinking skills were challenged. They took pride in involving Lamar University-Orange with its community by linking scholarship with public service. Both classes realized the culmination of their semester's work in a real book which was printed, copyrighted, and distributed to Tyrell Historical Library, Institute of Texan Cultures, and Texas Historical Foundation.

Joan Lyons, *Instructor, English*

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Encouraging Students to Read

Having taught in college-prep, community college, university, and private-college settings, I have come to a startling conclusion: Students do not read. I have taught a wide range of courses, from basic composition to conversational Norwegian, from vocational communications to advanced Spanish grammar.

Some of the experiences that led to my conclusion were: Students signed up for my junior-level survey course on Ibsen but did not know who he was; students in my fourth-semester Spanish grammar course had trouble with the readings about South America, because they did not know anything at all about the geography or economics of the continent; students in my English II research course tried to write term papers on novels they had never read.

These scenarios are familiar to all college instructors. My proposal is that we grab the students the moment they approach the front doors of the college. It is at that point we can start a development process.

* * *

The following recommendations are offered as steps in addressing the literacy crisis:

1. **Get involved.** Participate as much as possible in a progressive placement process. Encourage the registration process to use as many assessment instruments as possible. Serve on committees to read writing placement samples. Keep a tally of how many "undecided" freshman students have or have not taken advanced reading, composition, and literature courses in high school. Make a personal note of how many technical-program students have extensive liberal arts backgrounds. And most important, become involved with all the "borderline student" cases—those who could benefit from developmental math, reading, and writing courses but who try to opt for regular courses instead. Help those students get the content and study-skills assistance they need now to avoid failure and frustration later on.
2. **Become informed.** Find out what is taught in the developmental courses. Serve on a board, visit classes, ask about the reading assignments. Readings should lead them from the general to the specific; writing projects should firm up the basics and prepare them for the wide range of assignments to come in English I and other courses.
3. **Investigate.** Explore what students read—and then write about—in their freshman English courses. How do the texts relate to your field of teaching? What kinds of articles are required in your Intro to Business course? Will students be able to transfer the skills needed to critique poetry to the skills needed to abstract an article in *Business Week* for your class?
4. **Become a reading advocate.** Share with students the news you have come across in your field. Help them see how all things are related by bringing articles from other fields to class. Give the students points for summarizing articles or pamphlets on a problem or issue related to your course. Make time to reward their reading projects aloud and in written form.
5. **Encourage development and diversity in students' schedules.** We always complain that students cannot read maps and cannot locate the Pacific or Atlantic Ocean. We must urge students to get a basic sense of geography. If not, all our attempts at teaching multiculturalism and international issues makes no sense to them.
6. **Encourage credits for reading.** Push your administration to offer more one-credit elective courses on current events, on novels, on the history of Germany. Students enjoy such courses and, if offered quality materials, will be reinforced in their attempts to "learn more about the world."
7. **Network with other teachers.** Take a psychology instructor to lunch and discuss learning disabilities. Look for parallels in subject matter. Students often complain that their first few years of coursework have no connection. Encourage collaboration between colleagues. Consider how closely related basic reading, writing, speech, and psychology courses are in their overall attempt at describing human interaction and communication.

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8. **Team teach.** Help your institution offer more linked courses such as English I plus Intro to Sociology or Intro to Teacher Education plus Intro to Economics. Help students draw out relationships.
9. **Fight for small class sizes.** The fewer the students, the more time to help them. Keep the reading and writing courses well under 20 students. There is simply not time to respond to 30 or 40 assignments per section each week. These are the building-block courses in which students should be getting a strong foundation for completion of their certificate, two-year degree, or possible university coursework.
10. **Become an example.** Read everything. Subscribe to the local newspaper, to business magazines, to teaching journals. Read three novels every summer—one old, one new, and one of your best friend's choosing.

Implementing changes in students' attitudes about reading depends on you. If we want students to have an appreciation for reading, we are the ones to develop it.

Thomas L. Hansen, *Consultant, Education*

For further information, contact the author at the Department of Curriculum Improvement, Illinois State Board of Education, 100 N. 1st Street, Springfield, IL 62777.

* * *

Curiosity and Problem Finding/Solving: Powerful Teaching/Learning Allies

In my humanities course I encourage my students to become "artists," though they secretly resent the idea as another crazy gimmick by a less-than-orthodox instructor. In the humanities course, students are bombarded with hundreds of images which are to be discussed and memorized for later testing. Unless the student has retained at least one feature of the image, typically he will not recall the image during the identification portion of the objective test. Reluctantly, the students have accepted the corollary to the artist scheme that "problem finding" can achieve many surprising learning experiences.

With this strategy, I encourage my students to explore their classroom environment carefully, and I encourage the sensitivity of a student's momentary curiosity. I frequently include stimuli that are unique, original, or, at times, slightly bizarre—an unusual object or a portion of a larger object, which has something to do with the development of culture somewhere on our planet. I begin by asking the obvious: "What is it?" or "What does it do?" or "Do you know where it comes from?" or "What is wrong with it?"

It is essential to point out to the students that how the problem is stated or defined will determine, in great part, how it is answered—the narrower the definition, the narrower the solution. Ask a student, "What do you use a camera for?" and the answer might be, "To take pictures." But the question "What can a visual artist gain from using photography?" requires answers that might encompass a larger collection of ideas about related disciplines (i.e., advertisement, graphic design, etc.).

Alberto Meza, *Assistant Professor, Humanities & English*

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Audible Commas

As an English instructor, I am frequently faced with the task of teaching comma usage to college freshmen, many of whom have a paranoia about commas and feel that, if they have not learned commas by now, they will never learn them. We go through the rules in the handbook repeatedly, but even after successfully completing the exercises, many students do not transfer that knowledge to their own writing. Most of all, they are less than enthusiastic about spending several class periods listening to comma rules.

In my search for a new approach to teaching commas, I thought back to my undergraduate work-study job where I listened to dictaphone tapes from which I typed letters. My boss would say the punctuation aloud, since while I was typing I never knew when a sentence would end. I noticed that after just a few letters I began to "hear" the punctuation in my mind whenever I talked or listened to others. Most of our language skills are not based on memorized rules but on what sounds right: native speakers never make a mistake in the use of "a" versus "the," but who among them could explain the rule for choosing an article? I never even thought about it until an ESL student asked me, and then I was stumped by the rationale. I thought there must be a way for students to learn to "hear" commas so that they would not have to rely only on grammar rules which are painfully memorized and quickly forgotten.

I used one of my English 99 courses as an experimental group and the other as a control group to determine if an instinctive use of commas can be as effective as a rational approach. At the beginning of the quarter, the students took a pre-test in which they inserted commas into a literature excerpt and answered True/False questions on the comma rules. The number of commas missing or used incorrectly on the pre-test and on their first writing assignment represented the students' previous knowledge of commas.

For the experimental group (which I called the Romantic class) I typed two short stories, revising as necessary to include various comma usages. I distributed stories, and then I read them aloud, saying "comma" when one appeared, while the students followed the words. I emphasized the importance of staying with the reader so that their exposure to correct comma usage would be visual as well as aural. After I finished the stories, each student took a turn reading one paragraph until we had read them through a second time. When we finished reading, students asked some questions about why commas were used in certain places, and I answered with the appropriate rule as simply stated as possible, also noting that it was natural to pause at that spot.

We learned commas this way for two class periods while the control group (the Classic class) spent two class periods working on comma rules and exercises in the handbook. But while the control group took their comma work as a bitter pill, the experimental group seemed to enjoy it. After two days of intensive work, we only discussed commas when a student asked a specific question pertinent to his or her writing. For both classes, I responded with the comma rules and also pointed out that the comma "sounded right" there.

At the end of the quarter, both classes took a post-test and submitted their final writing assignment. On the tests, the Classic group showed a much greater improvement. Their scores increased 16% on the literature section and 18% on the True/False questions, compared to the Romantics' 1.5% improvement on the literature and 16% *drop* on the True/False. In terms of comma usage in their own writing, however, the Romantic class improved by 62%, nearly twice the Classics' 34%. These results suggest that students can use commas correctly in their own writing without knowing the rules. Since the rules are so easy to forget, I find these results encouraging.

In terms of the students' feelings about the teaching methods, all of the students in the Romantic class, except one, said that they liked the approach. The Romantic method will work better for some students than for others; some appreciate knowing the rules. In the future, I plan to use a combination of both methods, reading commas aloud and then covering the basic comma rules, but it will be important to read first for the *feel* of commas.

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Community College Leadership Program, Department of Educational Administration
College of Education, The University of Texas at Austin, EDB 348, Austin, Texas 78712

OPTIONS: An Approach to the Recruitment and Retention of Female Students in Technical Areas

The faculty and staff at Danville Community College realized that after almost 30 years of supposed equal access to educational programs, most women enrolling at the college were entering the traditional female career areas: nursing, childcare, education, and secretarial. Attempts to encourage women to enter trade or technical curriculums had met with very little success. Recruitment of female students was very difficult, and those who did enroll in the programs often dropped out without completing significant amounts of the curriculum.

The college examined a variety of factors that were thought to have an impact on the recruitment and retention of female students—the academic skills of females in the technical areas; instructors' attitudes toward female students; male students' attitudes about females in the curriculum; and employers' reactions to females in technical jobs. We found that the academic skills of entering females were good; male instructors welcomed female students into the technical curricula; male students exhibited little resistance to female students in technical curricula; and many employers indicated they like to employ qualified female technicians.

* * *

So what was going wrong? From discussions with female technical students, we learned that they were moderately satisfied; however, they repeatedly made comments such as "I'm lonely being the only female in most of my classes," "I'd like to have another woman to talk to sometimes," "I'd like a chance to talk about my kids instead of sports!" or "The guys are nice, but when I try to talk to them about how they feel about things like career decisions, they don't want to talk." It appeared that the female students missed the forms and topics of communication that were more common among women.

* * *

A plan was formulated to recruit a large group of female students, keep them together as a group while working on their technical and math skills, expose them to successful women working in technical fields, and encourage the communication and bonding that appeared to be missing for the isolated female student in a technical curriculum. Danville Community College received a gender-equity grant to assist recruitment activities. The program was called OPTIONS to reinforce the broad spectrum of career choices available to women. The key component of the recruitment effort was to give female technical students a "warm up semester" by placing them in all-female classes. During the first semester, the students took such courses as Blueprint Reading, Industrial Mathematics, Technical Writing, Introduction to Trade and Industrial Careers, Tools and Terminology, and Human Relations; all of these classes are required in the majority of technical curricula at the college. The students were encouraged to talk about their families and their feelings about entering a nontraditional field, luncheons were held, the "buddy system" was encouraged, and verbal reinforcement was used frequently.

* * *

During the next academic year, these students will enter regular classes including both female and male students. It will take several years to determine if this approach to recruitment and retention of female students in technical areas is significantly effective. However, the technical areas of the college had a one-year increase (approximately 114%) in enrollment of female students. Student surveys of the program indicated a high level of satisfaction, and instructors were enthusiastic and optimistic about the success of the participants.

Boyd Motley, *Division Chair, Engineering & Industrial Technologies*

Janet Tate, *Coordinator, OPTIONS Program*

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Suanne D. Roueche, Editor

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Students as Psychological Consumers

It is an exciting time to study psychology. The field is exploding, the controversy between research and clinical practice is growing, and applications of psychological research are affecting virtually all aspects of our lives. Recognizing that very few of my introductory students will take a second course in psychology, or that no more than five will major in psychology, I invite students to discover the principles of psychology as they apply to their lives.

We live in a world filled with information and misinformation about what makes people do what they do. Popular culture, as seen on television and in the press, has fed us a regular diet of both serious and sensational accounts of (a) the effects of mind-altering drugs; (b) the motivation of serial killers and child abusers; (c) the therapeutic possibilities of behavior modification to control habits such as smoking; and more.

A Healthy Dose of Skepticism

With so much quasi-scientific and "pop psychology" available, it is getting more difficult for the public to distinguish reputable psychological work from what R.D. Rosen (1977) calls "psychobabble." Even at the introductory level, students should be able to inquire about behavioral antecedents and consequences and to view with skepticism the explanations in popular media reports on psychology and other social sciences.

They Know More Than We Give Them Credit For

My experience with community college students is that they understand a great deal more than we give them credit for knowing. Even though most of the students enrolled in an introductory class have no previous formal instruction in psychology, many bring a high level of awareness to their studies. Some have knowledge and strong opinions about many issues facing psychology. Yet, others may be interested in the scientific facts and theories that will aid in understanding pervasive social and personal problems.

The issue for many community college students is not ability, but motivation. They ask why they should learn the material. The instructor and the textbook are invitations to the fascinating and exciting world of psychology, but the student determines whether he or she will accept the invitation. The invitation that gives students a compelling reason to learn is most likely to be accepted. One compelling reason for learning is application. The issues examined by psychologists have the wonderful quality of being relevant to students in their everyday lives. The psychological method is rigorous, careful, and cautious; but the issues examined in the field have inherent interest and application.

One of the course requirements used to challenge students is the Psychological Consumer Review (PCR). In the syllabus, I state: "PCRs . . . provide each student an opportunity to develop a keen sense of how psychology applies to everyday life. Each student has the opportunity to earn a maximum of 100 points by submitting 10 articles read from a magazine, newspaper, or journal relating to our study of psychology." In class I invite students to be cautious of "pop psychology" and quasi-scientific information, and show them various examples of what I mean. In addition, two books on reserve in the library contain a series of contemporary articles relating to the six areas of study covered in the course. Students are encouraged to turn in their psychological reviews as they coincide with chapter readings and class discussions. My goal is to create a continuous flow of relevant information—inside and outside of class—to present students with a view of psychology as an intellectually cohesive discipline and as a challenge for students to explore, analyze, and discern among the bombardment of psychological information.

Thinking Critically

Prior to assigning the review as a course requirement, time was spent determining what specific student learning goals and objectives I hoped would be achieved. What is the purpose of having students complete psychological reviews? How would this be integrated with what is being covered in class? How could this challenge students to develop reflective skepticism, to challenge those who say they have all the answers to life's problems?

By encouraging students to think critically, I give them an opportunity to make sense out of their world by examining their thinking and the thinking of others, to clarify and improve their understanding. It is by questioning, making sense of things and people, and analyzing that we examine our thinking and the thinking of others.

Psychological Consumer Reviews

On a 3" x 5" index card, students address the following elements of the psychological review:

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1. Source
    - Article (magazine, newspaper, journal)
    - Date of Article
    - Author (if known)
2. What is the main point(s) of the article?
3. What does this have to do with my understanding of what we are currently studying in class? What does this have to do with my life?

By having students turn in a copy of the article with the index card, I have an opportunity to refer to the article when reviewing and evaluating each psychological review.

Students have responded favorably to the effectiveness of the psychological reviews:

> "The main point of this article is the focus on questionable reliability of eyewitness memory. Citing researcher Elizabeth Loftus, who we studied in class, and Freud shows that what is 'remembered' may not have happened. This article shows the current legal implications of psychological research. It is very interesting to see my studies come to life in current events."

> "This article ties in with our discussion of child development . . . Reading the article brought to reality some of the issues I read about in the book."

> ". . . While reading this I was surprised at how close this article followed the chapter in our book. I have gained a better understanding of the psychological steps involved in the process toward adulthood. I am getting to see how some of the changes that have occurred within my life co-relate with event studies in the article and give me a better understanding of what may happen down the road and how I can better prepare myself."

> "The main point of the article is that millions of Americans suffer from dyslexia . . . This is a very important article, because I have an uncle who had dyslexia when he was younger, and this gives me a better understanding of his problem."

> "Working in a psychiatric hospital, we are seeing patients with MPD, some who have been misdiagnosed and others who are true MPD patients. I believe this article, along with what we studied in class, will help me work with this type of patient more effectively."

> "The main point of the article is that Jeffrey Dahmer is pleading he is innocent by reason of insanity. This article made me really think about whether or not having a mental disorder, or claiming to have one, should excuse a person's responsibility for their actions."

> "The main point of the article is that different cultures of people have different patterns of cognition. Among the same I.Q. level, people in different cultures score better on different parts of the test. It makes me think, 'What if a teacher is teaching in such a way that doesn't help me as much, but will help the next person a whole lot?' It may not even be the teacher's fault that this is happening. It may be because of a lack of awareness of other cultures."

Hidden Benefits Discovered

I have thoroughly enjoyed reading the many psychological reviews this past semester. In addition, I have been able to keep up with the psychological information students are exposed to in their everyday lives. Much to the pleasure of my English colleagues, students also have approached the written reviews as a "writing as learning" exercise. The very process of writing facilitates learning.

Students indicated the reviews enabled them to retain more information while preparing for their final exams. Interestingly, memory research suggests that thinking critically and creatively about information—organizing it, analyzing it, evaluating it, and understanding how it can be applied, is crucial. I hope that these skills will assist students in succeeding in class and will enhance the basic skill of using information.

Psychology is more than a body of knowledge; it is a way of approaching and analyzing the world. Students are able to develop a scientific and applied attitude toward psychology, a personal understanding of cognition and behavior, and a sense of psychology as an integrated discipline in which critical thinking and problem solving skills are more important than memorization of numerous details.

René Díaz-Lefebvre, *Professor, Psychology*

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Suanne D. Roueche, Editor

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An Approach Toward Teaching Nontraditional Literature

For the 1991 fall semester, I offered a nontraditional literature course: Major Black Writers. I decided, since this was a nontraditional course, that I should teach it in a nontraditional fashion. I felt that my students might get more out of the class and that I might enjoy teaching it more. First, I should explain how I taught a traditional literature course, i.e., Survey of British Literature, Part I.

For a traditional course, I felt obligated to teach in a traditional manner, which meant I gave my students a mid-term examination, comprehensive final, a research paper assignment, and regular (almost daily) quizzes. This approach, it seemed to me, was best for two reasons. One, I was most comfortable teaching Chaucer, Shakespeare, Milton, etc., in a way that is organized either by genre or by chronology. Most anthologies are organized this way, as well. Two, I taught traditional literature courses this way simply because that is how they are taught at almost all other colleges and universities; my transfer students would not have any trouble convincing an English professor that my Survey of British Literature, Part I, is virtually identical to the one his own institution offers.

For Major Black Writers, however, I finally decided this traditional approach would hurt the class. Since the course was designed by the University of Kentucky to cover more material than a traditional survey, I was obliged to cover major black writers from Africa, the Caribbean, as well as the United States. Further, the course was to touch upon oral literature in addition to written texts. Obviously, any type of genre or chronological organization would be very difficult to find. I also decided, since the course would typically transfer only as an elective, that I was not under any obligation to research the most common ways of teaching it. Therefore, I was liberated from tradition and consequently would have only one overriding goal for the course: I wanted my students to enjoy so thoroughly the reading that they would read other black authors on their own. I succeeded in that goal!

I selected four books, one film, and a variety of oral works that could represent the range of material I wanted to cover. Then I outlined the course of study and how I would evaluate students' progress: I would require a reading journal (35% of the semester grade), a portfolio of creative work (50%), and steady attendance and class participation (15%).

The reading journals, collected weekly, allowed me to monitor the students' reactions. Each week's entry was to be at least three pages; and, by the end of the semester, there were to be no fewer than 50 completed pages. Occasionally, I gave students specific questions to answer in the journal, but usually I left it entirely to each student to respond to the readings. To accomplish this, I asked them not so much to analyze the poems, stories, etc., but to respond to "How did this affect you emotionally?" Almost every student put a great deal of effort into the journal. I responded in kind by giving lengthy written comments and reactions. Often I had a continuing debate—some lasting for a month or more—with a student about a particular work. I think I accomplished as much through these written dialogues as through class discussions.

The creative portfolio (25+ typed pages) also worked much better than I could have anticipated. Students were very apprehensive when they discovered they would be required to write either poetry or short stories. Most had done neither; all expressed doubts that their efforts would be any good. I offered them constant encouragement, and by mid-semester, most of the students had begun to write. Typically, their first efforts were materials adapted from their journal responses, but then they began to make connections between what we had read or discussed and their own lives. Suddenly, their writing became more personal; invariably, it also became more interesting. At the end of the semester, I was so impressed with the quality of their work that I decided to put together a magazine of the highlights. I retyped about 20 pages of poetry, designed a cover, then photocopied the pages and stapled them together. I distributed the magazine to my former students the first day of classes the next semester. They, in turn, proudly showed it to friends and classmates, which raised interest in the class for next year. The magazine, originally only an afterthought, will now be a featured attraction of the course in the future.

The third criteria in the evaluation process (attendance and participation) was an obvious incentive for the students. While they tended to find the reading interesting and the class discussions invigorating, we had occa-

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sional off days. However, most students remembered that this part of the grade was significant, and so made an extra effort to attend and contribute.

Through all three class requirements—reading journals, creative portfolio, and attendance and participation—I was able to measure the effort and time the students put into the course, as well as measure their improvement in writing and critical thinking. Further, I know the class was a success because a number of students have gone on to explore black literature on their own, and some have taken up creative writing and are submitting poems and stories to the college literary magazine. I also know that I intend to teach the class as often as I can.

So what does all this mean? First, a nontraditional literature course should have different goals than a traditional literature course. Rather than filling up the students with esoteric knowledge (who wrote what and when), the emphasis should be placed on "turning students on" to literature. The goal should be inspiring them to enjoy reading during the course of the semester and, with any luck, to continue to read after the semester has ended. Second, the success I had with Major Black Writers has led me to change my approach to teaching traditional literature courses. Although the earlier problems I raised (e.g., a need for the class to be virtually identical to similar classes at other schools) are still valid, the sheer success of the Major Black Writers course calls for some of its points to be considered for use in traditional literature courses, too. Currently, I am experimenting with the idea of requiring my students in such courses to keep reading journals; I am also intrigued with the idea of having them write creatively—perhaps they could use the Elizabethan sonnet form to explore their own personal traumas and heartaches. In my case, why should I object if my course not only teaches my students the esoteric knowledge that is so essential, but also inspires them to read outside of class and write on their own?

Jim McWilliams, *Instructor, English*

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The Joys of an All-Essay Comprehensive Final

In my sophomore-level economics courses, my students are allowed to "drop" one of the scores of the five tests taken over the semester; but, if happy with the first four test scores, they can skip the final. However, the student who drops one of the first four test scores must show some knowledge of that section of the course on the final.

The first four tests combine multiple-choice and essay questions; and until recently, the final exam had been multiple-choice questions, primarily because they could be graded quickly. But, it had been my experience that the best students were not taking the final exam, that the overall scores were not very good, and that I submitted my grade sheets with a vague feeling of disappointment.

For those reasons, now the final exams consist solely of essay questions. I provide students with seven or eight questions the week before the scheduled exam; they come the day of the test and answer any five.

I have been pleased with the results. Fewer than half of the students now take the final; that, plus the fact that their answers are brief but good, makes the exams easy to grade. More importantly, the scores are generally high.

Is the final exam too easy? I think not. Students have had a week or more to prepare their answers, so I grade the essays rather harshly. The final exam is my last chance to see that students learn something, and I am convinced that they must make a more serious effort to prepare for an all-essay test than they would for a multiple-choice.

When my students perform well on an all-essay comprehensive final, I take joy in knowing that (1) I have done my job as a teacher and (2) they, too, will have a legitimate sense of accomplishment.

Danny Taylor, *Assistant Professor, Economics*

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Handicapped Awareness Day: A Special Teaching and Learning Experience

Have you considered how your college could promote a better understanding of the disabled—something more than brochures on bulletin boards, or lectures on selected topics or teleconferences—something low-cost, entertaining and uplifting, yet meaningful and informative? Is there a need to know more about state and federal agencies, support groups and current electronic equipment available to aid the disabled? What about Section 504 and the ADA—the Americans with Disabilities Act? What is your college doing to make the disabled in your area feel welcome? These are but a few of the questions a Handicapped Awareness Day could answer.

At Lake City Community College (LCCC), this day is dedicated to promoting a positive, yet realistic image of the abilities and needs of persons with disabilities. In addition, the event provides a way for the public to make direct contact with agencies, such as Vocational Rehabilitation, support groups, and companies that have produced the most current equipment.

Picture a disabled student sitting at a display table, talking with a rehabilitation counselor or with others who have a similar disability. Picture a student trying out equipment on-site.

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Our program is comprised of three sections. Our gymnasium houses 30 exhibitors:

1. Vocational Rehabilitation from the Florida State Department of Health and Human Resources
2. Public schools—disability awareness art posters and research papers
3. Progressive Employment from the Columbia Association for Retarded Citizens
4. North Florida Mental Health
5. Parent Information Office for the Deaf and Blind
6. Florida School for the Deaf and Blind
7. Three Rivers Association for the Deaf
8. Audio Hearing Service
9. Southern Bell—TDD equipment for the deaf
10. Special Olympics and Boy Scouts
11. Special Girl Scouts
12. Disabled American Veterans
13. Florida Diagnostic and Learning Resource Systems (Learning Disability Exhibit)
14. Columbia County Public Library (enlarged print, Recordings for the Blind, and ADA information)
15. Florida Vision Systems
16. LCCC's optical computer scanner/voice input and output equipment
17. Xerox Imaging Systems
18. Kurzweil Personal Reader
19. Adult Basic Education for the Visually Impaired
20. Columbia County Visually Impaired Support Group
21. North Florida Sales, and Rentals (canes, wheelchairs, and equipment for physically challenged persons)
22. Columbia County Extension Office (nutrition/safety and home-related services and 4-H projects, such as raising guide dogs)
23. VA/Americans with Disabilities Act
24. Briarwood Center for Independent Living
25. Southern Media System (classroom materials for special education)
26. UpReach Pavilion (spinal cord and brain injury center)
27. Dental Hygiene for the Disabled
28. Epilepsy Service Program for Shands Teaching Hospital of the University of Florida
29. EZ Reader
30. Lake City Lions Club and related services, such as the Eye Bank and glasses
31. Suwanne Valley Community Coordinated Childcare (childcare services for handicapped parents)

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On the campus grounds outside the gymnasium, there are additional activities. Campus tours on golf carts are provided to introduce disabled high school students to our educational programs and facilities. A wheelchair-bound student demonstrates a customized van. Since he makes directional signals with movements of his head rather than with his fingers, those watching his demonstrations clearly see how the disabled are able to cope with

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severe physical problems. Veterans Administration Medical Center personnel and Disabled Veterans members demonstrate a bus with a wheelchair lift that complies with ADA standards. A car with an overhead wheelchair compartment is displayed.

The Girl Scouts of America participate from a 15-county area in north Florida; they conduct awareness activities such as Trust Walks (people are blindfolded), Crutch Walks, and wheelchair courses. This year, they constructed a disability maze with scouts providing awareness information and experiences such as lip reading to guide people to the finish. This group also sells hot dogs and drinks with proceeds going to buy additional electric doors for our campus and to help provide emergency funds for disabled LCCC students. Student government clubs and the Florida Association for Community Colleges sell "Country Store" homemade goodies and raffle tickets to contribute to our "Doors for the Disabled" project.

The second main event is presented under a large circus tent. Performances take place on a raised ramp stage from 10:00 a.m. until 2:00 p.m. Sign language interpreters volunteer their services throughout the day. Events include:

1. Special Education Boy Scouts presenting the flag and leading the Pledge of Allegiance
2. Campus vice president, student leaders, faculty, and staff drawing for a "Disability for the Day" (These individuals assume a handicap until the afternoon and then report their experiences and the barriers they encountered.)
3. Awards to outstanding disability service providers
4. Kids on the Block (disabled puppet show)
5. Sign Language Songs by school children, sign language instructor, campus signer, and faculty
6. White Cane & Southeastern Guide Dog demonstrations
7. Gospel singers (A disabled student is a member of this group.)
8. Dance troupe and cheerleaders from Florida School for the Deaf and Blind
9. A disabled musician playing the piano and organ.

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The third event of the day is the rough-and-tumble wheelchair basketball game. Free tickets are distributed to recreational centers and schools around our community to draw all ages to this event. A halftime show is presented by the cheerleaders from Florida School for the Deaf, the LCCC dance team, and the Lake City Junior High Falconettes Dance Group.

The costs are nominal, and the event may make money. Our costs consist of providing a lunch and dinner for the cheerleaders and dance troupe and wheelchair basketball game referees. Donations cover other expenses. Once expenses are cleared, the balance is profit made from refreshments, raffle, and small item sales. The proceeds go toward the purchase of more electric doors for the disabled. Local clubs and organizations also are solicited for a donation to defray expenses.

Some public school teachers and college instructors present Handicapped Awareness units or activities before the college day. Various disabled students from our campus make presentations in selected classrooms and scout meetings.

How can your campus plan a Handicapped Awareness Day?

1. Form a planning committee composed of community representatives from state and local agencies, clubs, businesses, volunteers, and campus personnel.
2. Select a chairperson for committees such as Schools, Volunteers, Program Development, Funds Solicitation, and Publicity.
3. Involve the Student Government Association and campus clubs.
4. Develop a logo and theme.
5. Research the latest equipment and materials and invite new companies to attend.
6. Seek to represent all disabilities.
7. Invite public school superintendents, college boards of trustees, churches, civic clubs, city and county leaders, and business people.
8. Have your exhibitors and performers evaluate the program.
9. Stress that more than 43 million Americans with disabilities need to be portrayed realistically and their disabilities need to be explained accurately.
10. Consider the needs of people with disabilities when planning events.

Handicapped Awareness Day has been a success! Local support groups have been formed, networking with state and federal agencies has improved, displayed products have been purchased, community involvement and awareness has been increased, and transition from schools to college to jobs has been enhanced.

Edna Hindson, *Counselor, Handicapped Services*

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Student Test Anxiety: What Can College Instructors Do to Help Reduce It?

Maria is a good student, but dreads taking tests. Even though she studies her course material carefully and feels she really knows it, when she walks into class to take an exam she begins to panic. Tim also wants to succeed in college, but he has a very active social life and participates in a number of extracurricular activities. Tim spends a fair amount of time studying, but he often finds himself not fully prepared for his exams. He often panics in testing situations and worries about his performance in school. Like Maria, he spends a lot of his time both before and during the test worrying about how he will do and the consequences of failure.

The Components of Test Anxiety

These students suffer from high test anxiety. For many years we thought that test anxiety was manifested only in physiological symptoms—sweaty palms, "butterflies in the stomach," nervous tics, tense muscles, and rapid breathing. Now we know that anxiety has two major components: cognitive and physiological. The physiological component, which is generally referred to as emotionality, refers to how much attention students pay to the symptoms of their increased physiological arousal (examples above). The cognitive component, which is generally referred to as worry, refers to students' concerns about their academic performance: Are they good enough to make it? What will happen if they flunk out?

While the physiological component is important, it is the cognitive component, worry, that negatively affects students' academic performance. Excessive worrying pulls students' attention away from the academic task, whether this is preparing for or taking a test, reading a text assignment, or listening in class. For example, if students are worrying about the grade they will earn on a test or the consequences of a bad grade, then their attention is directed toward their own anxious thinking and away from answering the questions. Students may have difficulty remembering what they studied, or misread the instructions or stem of a question. In fact, highly anxious students often have less time to take an examination than other students because they are spending so much of their time worrying about their performance rather than concentrating and focusing their attention on answering the test questions.

Worry—The Enemy of Effective Concentration

Worrying about academic performance or achievement usually is manifested in negative thoughts: (1) how the individual compares with other students (e.g., "These students are all younger and a lot smarter than I am."); (2) the consequences of failing an exam or a course (e.g., "I'll never pass this test! Well, I can forget about ever becoming an accountant."); and (3) the implications of failure for students' self-concept and their perceptions of their abilities (e.g., "I must not be very smart if I am having so much trouble with school.").

A number of problems can result from this type of thinking. First, worrying is not task-focused thinking. Worrying involves having self-focused thoughts, usually negative, so students are often not able to concentrate fully on the academic task at hand, particularly if it is difficult. Their attention is divided between task-relevant thoughts and worrying (task-irrelevant thoughts). Because they are not able to fully concentrate on the academic task, their performance is often not an accurate indicator of their knowledge or expertise. Second, worrying can lead to poor performance, which can reinforce the negative self-thoughts, resulting in an increasing spiral of negative thoughts interfering with performance. Over time students may give up hope and decide to drop out of school rather than face further occasions for failure. Finally, students' self-concepts and their feelings about themselves and their competence can suffer.

Identifying the Type or Source of Students' Test Anxiety

There are basically two different types of test-anxious students. The first are the students with relatively poor study skills. They have trouble learning course material in a way that makes it meaningful and memorable. Lacking a reasonable repertoire of learning and study strategies makes it difficult to be effective and efficient as a student. These students are often unprepared for tests or other evaluative tasks. The anxiety they experience is under-

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standable given their accurate evaluation of their preparation and the probability of performing poorly.

The second type are the students who have a reasonable repertoire of learning and study strategies. These students know how to study and learn the material, but they have problems when they have to demonstrate that knowledge in testing or in other evaluative situations. By worrying, they deprive themselves of the opportunity to demonstrate accurately what they have learned and the skills they have mastered.

Given these two types of students, it is important to know something about the general nature of students' anxiety as well as the specific problems a given individual might be experiencing. One way to get this information is by using published, or widely available, measures of test anxiety, such as: the Learning and Study Strategies Inventory (LASSI) (Weinstein, Palmer, and Schulte, 1987), which includes a scale designed to measure student anxiety and worry about school performance; the revised Worry-Emotionality Scale (Morris, Davis, and Hutchins, 1981); or the Test Anxiety Scale (Sarason, 1972). If you do not have access to formal scales, then you could interview students about the anxiety they feel and what they think might be contributing to it. These types of discussions, on either an individual or class basis, can often help students to become more aware of their level of anxiety, identify the ways in which it may be interfering with their academic performance, and encourage them to do something about it.

How Instructors Can Help Reduce Students' Anxiety

After identifying the type of anxiety a student may be experiencing, the next step is trying to help the student do something about it. For students with poor learning and study strategies, it is helpful to refer them to learning assistance specialists or developmental educators. Many campuses now have learning-to-learn or study skills courses that can help students improve their learning strategies repertoire and the effectiveness of their study habits and practices. You can also help students develop more effective study and learning strategies by demonstrating and modelling these processes as part of your classroom instruction.

For those students who have a repertoire of effective strategies but suffer from worrying about how they will perform on exams and the consequences of failure, referrals often have to be made to counselors or learning assistance specialists. These students need attentional training to learn how to monitor their thoughts and to substitute task-relevant thoughts for task-irrelevant thoughts. These students need to learn how to monitor the content of their thoughts so that they can quickly become aware of when they are going off-task and redirect their attention back to the test.

A simple technique you can teach your students to use for this purpose is called thought stopping. While thought stopping does not deal with the psychological problems that may underlie test anxiety (such as poor self-concept and low self-esteem), it does give students a simple tool to reduce its negative impact on performance. Basically, this technique involves getting students to practice monitoring their thoughts so that they become aware of whether or not they are focusing on an academic task or on their worry. At first, they might want to monitor themselves (in practice situations) at 30-second intervals. As they start to practice thought stopping, they will be able to rapidly increase this interval to several minutes and eventually get to the point where they will monitor just a few times during an entire test.

The purpose of this monitoring is to help students become more aware of their thoughts and when they go off-task. Whenever the students find they are worrying about their performance rather than concentrating on answering the questions, they need to picture a stop sign or some type of wall and say "STOP!!" to themselves. They then redirect their attention to studying for the test or taking the test and continue until the next check. Over time, they will be able to quickly realize when their attention has wandered and refocus on the test.

There are other things instructors can do to help students who suffer from test anxiety: provide practice tests so that students can become familiar with the task and the types of questions; use mastery testing whenever possible; discuss test-taking skills and how to create a test plan. These methods are designed to help familiarize students with taking tests and with the skills required to demonstrate effectively what they have learned.

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A Different Approach—Teaching Creative Writing in the Older Adult Program

Monterey Peninsula College's Older Adult Program—an outreach program that sends teachers to meet with pupils who might not be able to attend campus classes—serves anyone college age or older, though the majority of the students are retired. Classes are held in community centers, retirement homes, nursing homes, or any place where 15 interested students and a teacher decide to devote two hours a week to each other.

* * *

At the first creative writing class meeting, I request that all inhibitions about writing be left at home, that spelling and grammar can always be corrected later, that what is needed now is the ability to record one's thoughts. At the beginning of each two-hour class, I present a springboard, then a suggestion for the subject of the day's writing. We, *myself included*, write for about half an hour. Then, as I sense completion, I open the floor for sharing. In most classes, everyone shares, although there is no demand to do so. Occasionally, people choose to pass, and we all accept that there are days when that is necessary. I always share last, and some of my better writing comes forth during these times!

Why does this work so well? I am certain that my enthusiasm and absolute belief that everyone has the ability to write creates a positive setting. (One woman had misread her catalogue and thought she was attending a travel class; she has been with me for three years and delights at her initial mistake!) Also, critique is primarily positive; appreciation of good work and acknowledgment of growth is forthcoming, as is the balance, when one has not produced at one's usual level. Also, and this is of prime importance, because we share deeply through our writings, a sense of community is created and friendships grow beyond the classroom.

What do I do? Usually there is an introductory period. We speak of pertinent topics: learning about a good book someone has read, announcing a poetry reading that is scheduled during the week, congratulating a person whose work has appeared in a local publication, welcoming someone back who has been away. Then I present the lesson.

I have been conducting this class for almost five years (some of my students have been with me that long), and I am always collecting ideas. Of course, what better springboard is there for writers than other writing? When I read a piece that I find special, it ends up in my lesson plans. Some examples of written works that I have used include: children's books, poetry, editorials, dialogues from novels, and essays.

* * *

These writing assignments are guaranteed to stimulate students' imaginations:

- Give each student a want ad around which to create a story.
- Hand out picture postcards; ask students to place themselves in that setting.
- Use postcards; ask students to speak as though they were an object on the card.
- Bring in flowers, both artificial and real, and ask students to write their feelings about the contrast.
- Bring in seasonal food; ask students to use all their senses to write a memory.
- Play classical music; let the sound dictate the writing.
- Pass out old *Life, National Geographic*, or *Gourmet* magazines to stir memories.
- Bring an oil portrait of two people; have students create a conversation.
- Copy the first paragraph of a novel; ask the students individually to continue.
- Write a past memory in the present tense. (This is good for beginning students.)
- Write a letter (to someone you like, a public official, the editor of a local paper, etc.).
- Create an abstract fabric collage; then see what it is telling you to write.

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- Choose a letter in the alphabet; write to it.
- Write a dialogue with a famous person.
- Imagine a special meal and guests.
- Create a character; describe thoroughly.

* * *

Most of all, we have fun. For many of my students, these two hours are the highlight of their week. We laugh, and sometimes cry, together.

Most of all, we remember to remember; when some of us are published, so much the better. But the main focus is our island of time where each of us takes others on a journey to a place that is newly recalled or created. We leave enriched by these gifts.

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Debriefing Tests by Creating a Moment of Truth

Just prior to returning the results of the first test, I ask students to submit anonymously their most accurate estimates of out-of-class time studying for the course. I then ask for a volunteer to determine the class's average study time. Meanwhile, the tests are returned and reviewed; with an item analysis in-hand, I "throw out" individual test questions which appear to have been unreasonable—that act of mercy alone helps to create a bit of encouragement for the class inasmuch as most students get credit for one or more questions that have been discarded, thus slightly improving their scores.

Now for the moment of truth. I write the class's first test average on the chalkboard, almost always to sighs, groans, and exclamations. (For my classes of 20 to 40 students in Western Civilization and American History, test averages usually are in the 60s (D), certainly no more than the low 70s (C-).) I then ask the student volunteer to report the class's average out-of-class study time. Without fail, the average is about one-half, never more than two-thirds, of the recommended "two hours out of class for each hour in class" rule-of-thumb that is spelled out in the syllabus. In fact, on one occasion a class averaged exactly 61 percent of the out-of-class time that was recommended while averaging a score of 61 on the test! The correlations are not usually lost on the students; if they are, I bring them to their attention!

With as little "preaching" but as much concern as possible, I explain that if only one student has made an A on the test, I consider the test valid, and especially so if the class average study time is demonstrably less than the "two-for-one" recommendation. I exhibit my willingness to assume some responsibility for student performance by granting credit for questions that were unreasonable, as per the item analysis. Likewise, I suggest that the remainder of the responsibility rests upon the student, given the deficiency in study time. To end the debriefing on as encouraging a note as possible, I sometimes promise that if the class's average study time increases for the next test, I will award bonus points to each student.

* * *

What is accomplished by this debriefing? First, it identifies the difference between high school and college schedules. Having no significant reference point for college work other than their own high school experiences, students frequently dismiss the "two-for-one" rule. Second, after students see the class's average test performance correlated with the class's average study time, protests, such as "The test was too hard . . . The questions were picky . . . The test wasn't fair . . . The test didn't cover the material we expected," are rare. This moment of truth has proven effective in maintaining an atmosphere of goodwill, professionalism, and encouragement in my classes.

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